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Cover photo: Prince William County, VA
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Rural Development Perspectives (ISSN 0271-2171) is published three times per year by USDA's Economic Research Service. Call our order desk toll free, 1-800-999-6779, for subscription rates and to charge your subscription to VISA or MasterCard.

Subscriptions to *Rural Development Perspectives* are also available through the U.S. Government Printing Office.

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Editor's Notebook

Carolyn C. Rogers begins this issue with a study of older women in poverty. Poverty affects 12 percent of Americans over the age of 60. It is a particular burden for women. With each advancing age group among the elderly, women make up an increasing majority of the population. Rogers found higher poverty rates for older women in rural areas compared with urban and a steady rise in poverty as rurality increases. This is a problem that could grow in significance as the elderly population doubles over the next 30 years.

Peter L. Stenberg examines a problem that has become more serious in recent years, the closure of military bases. Though more urban than rural bases have closed, rural economies are usually harder hit because they are smaller and less diverse. After closure, employment drops and the housing market and schools usually suffer, too. Communities have taken varied paths to recovery and have been helped by Federal aid and the good transportation infrastructure that characterizes bases. The author looks in depth at the diverse experiences of three communities.

Rail industry consolidations stemming from deregulation have improved efficiency but also have brought some negative consequences for rural America, such as abandonments and reduced competition. Dennis M. Brown's article discusses these problems and some of the strategies used to cope with them, including the growth of short-line railroads, the Rails-to-Trails movement, and the role that government can play.

H. Frederick Gale, Jr., explores the importance of export industries for rural areas. Using a special 1996 survey of manufacturers, Gale found that about half of nonmetro manufacturers export products. Natural resource-based industries, such as food, lumber, paper, and furniture, account for much of these exports, but industrial machinery, electrical equipment, and metal products are also important. Altogether, exports make up 10 percent of all nonmetro manufactured products and are strongest in the South Atlantic and East North Central regions.

Terry L. Besser examines the employment conditions of business enterprises in small Iowa towns. Despite low unemployment, earnings of Iowa nonfarm workers are about 18 percent below the U.S. average. In the smalltown businesses surveyed, most employees worked part-time and received fewer benefits. Over a quarter of the workers in these businesses were employed by firms with fewer than 10 employees. Development policies often overlook the smallest businesses.

In our Indicators piece, Jason P. Schachter, Leif Jensen, and Gretchen T. Cornwell look at the migration of the poor in Pennsylvania. There has been a trend in recent years for poor people to move from cities to nonmetro counties. The authors developed three indexes to measure the importance of poverty and education in this migration. They found that the poor who migrate to nonmetro areas move less for employment-related reasons than to find cheaper housing and to improve the quality of their lives. Overall, nonmetro areas in Pennsylvania are gaining the least educated poor and losing those with the best educations.

Douglas E. Bowers

Feature Articles

Indicators

Book Reviews

Carolyn C. Rogers

Poverty of Older Women Across the Rural-Urban Continuum

Poverty rates for persons 60 years and older are higher in the most rural counties than in more urban counties. Women age 75 and older account for about three-fourths of the older population in poverty. This article examines variation in poverty status (a critical indicator of well-being) among older women across the rural-urban continuum and by selected socioeconomic characteristics.

The aging of the U.S. population poses new social and policy challenges. The number of Americans age 60 and older was about 41 million in 1996 and is expected to more than double by 2030, when the proportion of the elderly is projected to exceed 20 percent of the population. The distribution of the older population is far from uniform across nonmetro America. The regional differences are distinctive, showing considerable variation in the changing number and proportion of elderly persons, based on differences in natural increase and net migration (Fuguitt and Beale, 1993). The future size of the older population is of fundamental importance for planning budget outlays and assessing liabilities of federally sponsored health and pension programs.

Poverty status is a critical indicator of well-being among the elderly. The elderly poor have less access to support services, good housing, adequate nutrition, and transportation than their wealthier counterparts. One-quarter of all older Americans live in rural areas, many of which are deficient in health care and social services. Among those 60 years or older, poverty rates of nonmetro residents are higher than those of metro residents, a disparity that is most obvious among the oldest old. Rural areas are diverse in the extent to which poverty is characteristic among the rural elderly population (Glasgow, 1993). The geographic distribution of the elderly population directly affects disparities between resources and needs—medical, social service, economic, housing, long-term care, and so forth—in communities, regions, and States.

It can be said that aging is a women's issue because women outnumber men at older ages. In 1996, there were about 23 million women 60 years and older to about 18 million older men. The difference between the number of men and women increases with advancing age; by age 75, women outnumber men 2 to 1. Because most older people are women, it is imperative that research studies on aging include both genders. As the National Institutes of Health (NIH) has recognized, research on women has been especially underrepresented and this relative lack of attention inadvertently helps to sustain older women's disadvantaged social, economic, and health status. Gender differences in older age disability and mortality will have an impact on the local community in terms of demand for services.

This article examines differences in poverty of the older population by county type. Two basic questions are raised: (1) does poverty vary systematically across the rural-urban continuum?, and (2) are metro-nonmetro differences in poverty rates for the older population due to the composition of the older population in rural and urban areas or to a higher risk of poverty among the rural elderly? This article examines the poverty status and selected social characteristics of older women by place of residence.

Carolyn C. Rogers is a demographer in the Food Assistance, Poverty, and Well-Being Branch of the Food and Rural Economics Division, ERS.

A classification scheme called the rural-urban continuum is used to distinguish metropolitan (metro) counties by size and nonmetropolitan (nonmetro) counties by degree of urbanization and proximity to metro areas. This results in a 10-part county classification. The four metro categories are (1) central counties of metro areas of 1 million population or more, (2) fringe counties of metro areas of 1 million population or more, (3) counties in metro areas of 250,000 to 999,999 population, and (4) counties in metro areas of fewer than 250,000 population. The six nonmetro categories are (1) urban population of 20,000 or more, adjacent to a metro area, (2) urban population of 20,000 or more, not adjacent to a metro area, (3) urban population of 2,500 to 19,999, adjacent to a metro area, (4) urban population of 2,500 to 19,999, not adjacent to a metro area, (5) completely rural or less than 2,500 urban population, adjacent to a metro area, and (6) completely rural or less than 2,500 urban population, not adjacent to a metro area. The analysis is based on data from the 1990 Census STF4 files.

Level of Poverty Increases Moving From Most Urban to Most Rural Counties

Poverty rates for older women are nearly twice that of older men (fig. 1). For both men and women, nonmetro poverty rates are substantially higher than metro rates, and the pattern of increasing poverty with increasing rurality is clear. For example, 12 percent of women 60 years and older in the most urban counties are below the poverty line. Moving along the rural-urban continuum, 25 percent of older women in the most rural counties are below the poverty line.

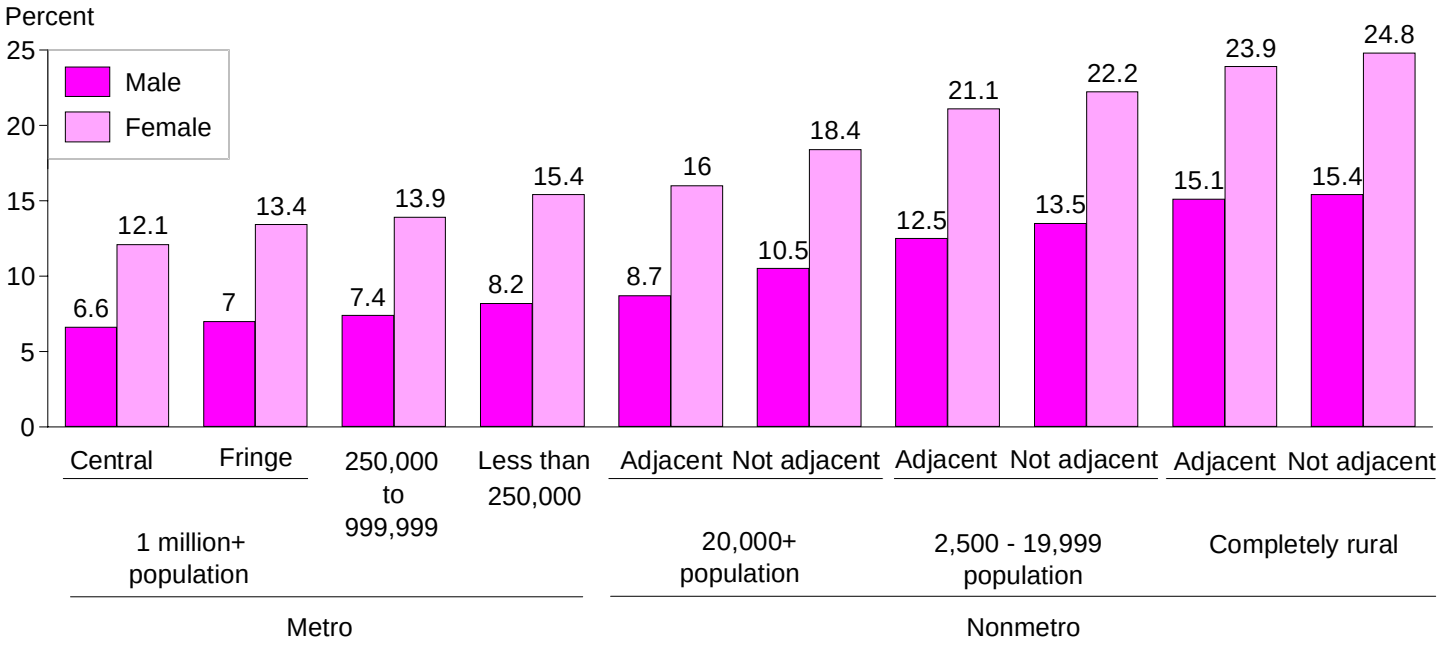
Southern counties have higher proportions of older persons in poverty. The older population is concentrated in the South, although a substantial proportion of the nonmetro elderly resides in the Midwest. Nearly 12 percent of poor older men and 20 percent of poor older women reside in southern counties. Figure 2 illustrates the regional distribution of poverty among older women, ranging from low poverty in northeastern and western counties (15 percent or less of older women in poverty) to the high concentration of poverty in southern counties (25 percent or higher). Among the general population, poverty is higher in rural than in urban areas, and the poverty rate is highest in the South.

While poverty rates are higher for older women than men, women's share of the poor population illustrates somewhat more dramatically the plight of older women. Women comprise over two-thirds of the poor population 60 years and older. The most rural counties have a smaller share of older women in the poverty population (66 percent) than do the most urban counties (72 percent). Far more older women than men live in or near poverty, and many cannot afford to retire. Their lesser economic

Figure 1

Poverty rates of persons 60 years and older by gender and rural-urban continuum code

Poverty rates rise along the continuum from most urban to most rural counties

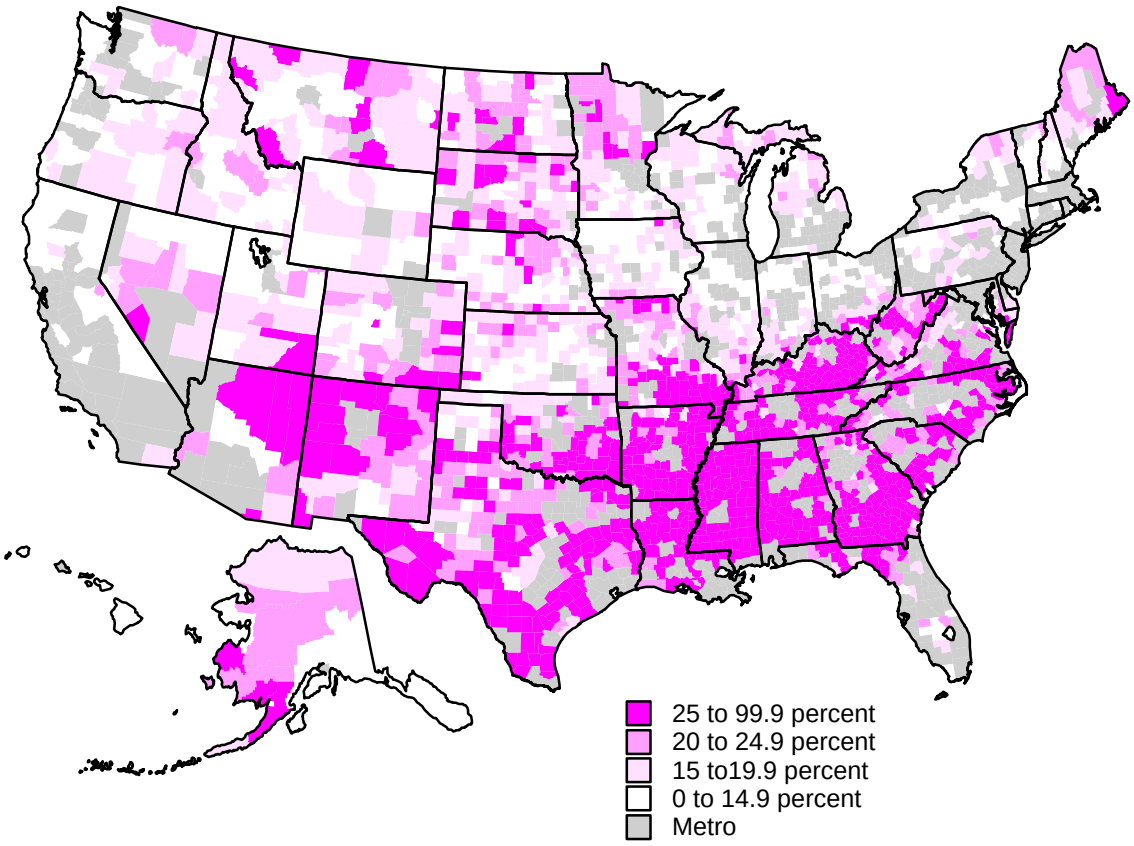


Source: Calculated by ERS from data from the Bureau of the Census, 1990 Census STF4 file.

Figure 2

Percentage of nonmetro older women below the poverty line

Poor older women are concentrated in Southern counties



Source: 1990 Census STF4 file.

security and higher risk of poverty is even greater for divorced or widowed women.

Within the older population, age is also an important factor in poverty status. Poverty rates for women 75 years and older are uniformly higher than when the young old (60 to 74 year olds) are included. For example, 34 percent of women 75 years and older are poor in completely rural, nonadjacent counties versus 25 percent for women 60 years and older in the same type counties. Poverty rates of women 75 years and older are higher moving across the rural-urban continuum from the most urban to the most rural county (fig. 3). Looking at the percentage of women in the poor population 75 years and older, women comprise 78 percent of the poor population in the most urban counties but only 71 percent in the most remote rural counties. Furthermore, the highest poverty rates for women 75 years and older are not found in the South. Instead, poverty is highest in the Northeast where women 75 years and older are 80 percent of the poor population, reflecting some return migration of the oldest old.

Older Renters Comprise a Disproportionate Share of the Poverty Population

Most older persons own their own homes (over four-fifths), a measure of economic security. Nonmetro counties have a somewhat higher share of homeowners. Home ownership ranges from 82 percent in northeastern counties to 90 percent in midwestern counties, reflecting the higher home ownership in the more rural Midwest. Older residents who own their own homes have very low poverty rates in metro counties (4 to 6 percent), and while still low, the rates in nonmetro counties are about twice as high (6 to 12 percent), increasing across the rural-urban continuum to the most rural counties. A similar pattern is found among those 75 years and older, with rates of 5 to 8 percent among metro county types, climbing to 16 percent in the most remote rural counties. Poverty rates of homeowners age 60 and older are highest in southern counties (9 percent).

Older renters make up a disproportionate share of the poverty population, especially in metro counties where 22 to 42 percent of the poverty population 60 years and older

were renters. A lower share of renters are below the poverty level in nonmetro counties, with 16 percent of the poverty population consisting of renters in completely rural counties, climbing to 23 percent for nonmetro counties with an urban population of 20,000 or more, adjacent to a metro area. Similarly, 16 percent of the poor population 75 years and older are renters in the completely rural counties, climbing to 38 percent in the most urban counties. The highest share of renters (43 percent) in the poverty population is in the Northeast.

A Greater Share of Poor Families in Nonmetro Counties Are Married Couples

Social support networks, measured by family type and household relationship, have an important bearing on poverty status. Metro counties have low poverty rates (3 to 5 percent) for older married-couple families. Nonmetro counties have higher poverty rates among older married-couple families. The rates increase with degree of rurality, from 5 percent in counties with an urban population of 20,000 or more, adjacent to a metro area, to 10 percent in completely rural counties. Similarly, among women 75 years and older, 4 percent are in married-couple families below the poverty level in the most urban counties, increasing along the rural-urban continuum to 13 percent in the completely rural counties. The most rural counties also have the highest share of poor families as married couples (75 percent) compared with 59 percent for the most urban counties. Poverty rates are higher for female householders. Metro counties have a higher share of female householders in poverty (24 to 35 percent) compared with 20 to 26 percent in nonmetro counties. These patterns partly reflect the marital composition of the area, with nonmetro older persons more likely than metro older persons to be in married-couple families.

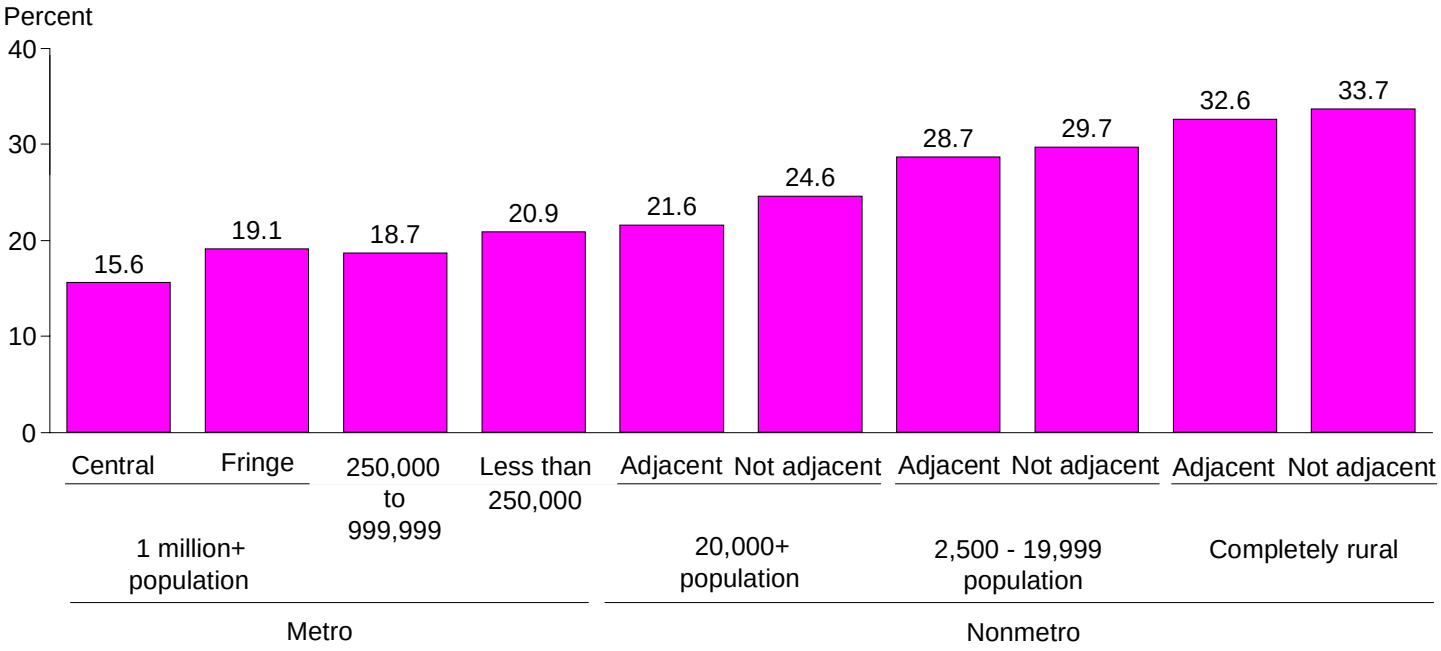
The percentage of married women 60 years and older varies between 42 percent and 48 percent, with the share of married women slightly larger in nonmetro counties than in metro counties. The percentage of women married at ages 75 and over ranges from 22 to 26 percent in the remote rural counties. A slightly higher percentage of widows is found moving across the rural-urban continuum to the more rural counties. The share of widows in metro counties averages 42 percent, but is slightly higher in nonmetro counties—44 percent in completely rural counties and 45 percent in nonadjacent nonmetro counties with an urban population of 2,500 to 19,999. The overall percentage of widows among women age 75 and over is higher (66 to 68 percent), with no clear rural-urban pattern. Thus, marital composition alone would not predispose nonmetro counties to higher poverty among older women.

Regional variation shows that the West, which has lower poverty rates, has the highest share of married women

Figure 3

Poverty rates of women 75 years and older by rural-urban continuum code

Poverty rates of women 75 years and older increase with rurality



Source: Calculated by ERS from data from the Bureau of the Census, 1990 Census STF4 file.

60 years and older and the lowest share of widows. A similar pattern is found at more advanced ages. On the other hand, the South has the highest proportion of widows (44 percent), which may affect the region's higher poverty rates.

Older Women Living Alone Are More Likely To Be Poor

Poverty rates for females 60 years and older living alone follow the same pattern as poverty rates for all older women, increasing with degree of rurality. Living alone places older women at greater risk of poverty, as seen by comparing the percentage of poor people who are women (78 to 82 percent) with the percentage of women among older people who are poor and also live alone (87 to 96 percent). Nonmetro counties have a higher share of poor older women living alone, from 92 percent of nonmetro counties with an urban population of 20,000 or more, adjacent to a metro area, to 96 percent for completely rural counties.

Poverty rates for older women living alone are highest in the South (25 percent). Because the South has higher poverty rates overall, its share of poor older women out of the total population of poor persons 60 and older (80 percent) is slightly lower than the share in the Northeast and Midwest (82 percent). The economic vulnerability of older women who live alone is emphasized by the high proportion of the poor older population who are older women living alone (93 percent in counties in the South and 89 percent in the Northeast).

Most older women are in family households (67 to 71 percent), with 23 to 27 percent living alone in nonfamily households and 4 to 5 percent in group quarters. The household composition in the South would not predispose the region to higher poverty. In fact, the South is more likely to have older women in family households than the Northeast or Midwest, and fewer widows, both conditions associated with a lower risk of poverty among older women.

As older women age, their economic situation further deteriorates. Eighty-six percent of the poor population 75 years and older in metro counties are women, and 82 to 85 percent in nonmetro counties. Most of the oldest old women in poverty live alone. Moving along the rural-urban continuum, 90 percent of poor women 75 and older in the most urban counties live alone compared with 97 percent in the most remote rural counties. Counties in the South have the worst situation for women 75 years and older, with 95 percent of these women who live alone falling below the poverty level.

Women's household living arrangements clearly shift at advanced ages. A smaller share of women age 75 and older are part of family households (48 to 52 percent), and over one-third live alone in nonfamily households. Older women residents of nonmetro counties are slightly more inclined to live alone in nonfamily households than those in metro counties. Counties in the Midwest tend to have a greater share of women 75 years and older living alone. This can be explained by the aging in place in many areas of the Midwest, especially the Corn Belt and Great Plains. Advanced age and living alone place older women at greater risk of poverty.

Most older persons living alone have incomes under $25,000, placing them at risk of falling below the poverty line. Once again, those in metro counties tend to be better off, with a larger share of older residents with incomes of $25,000 and above. For example, 11 percent of older women in the most urban counties who lived alone had incomes under $10,000 compared with 17 percent of those in completely rural counties. Among those 75 years and older, a larger share are in the lowest income category and rural-urban differences are wider. In the most urban counties, 18 percent of women 75 years and older live alone and have incomes under $10,000, increasing with degree of rurality to 27 percent of those in the most remote rural counties. In the general population, rural median household income is about 77 percent that of urban areas.

Regional differences in the income of older persons living alone show only slight variation; southern counties have the largest proportion of residents 60 years and older living alone with incomes under $10,000 (14 percent). At ages 75 and older, a greater share of residents living alone had incomes under $10,000, fully 22 percent in both the Midwest and the South.

The Older Population Is Concentrated in the South

As seen above, older women living alone and widows are more likely to be poor. Poverty is associated with other characteristics, such as age, disability, educational attainment, and employment status. The composition of the older population across the rural-urban continuum could affect poverty rates. In 1996, 93 percent of the nonmetro population age 60 and older was white as was 88 percent of the metro older population. Minorities are a smaller share of the older population than of the general population, and poverty tends to be higher among minorities. While the older population is becoming more racially and ethnically diverse, it is still predominantly white. The older population is concentrated in the South, with a substantial proportion of nonmetro elderly residing in the Midwest. The regional distribution of the older population does not differ from that of the general population. This article now looks at these associated factors to see if their distribution differs

across the rural-urban continuum and may consequently affect poverty rates. Do counties with high poverty also have a larger share of older women who are at advanced ages or are less educated?

The age-sex distribution of the population 60 years and older is similar by metro-nonmetro residence. The population age 60 years and older represents 18 percent of the nonmetro population and 15 percent of the metro population. The age distribution of older women shows only slight differences along the rural-urban continuum (fig. 4). Nonmetro counties have an increasing share of the oldest women age 75 and older, moving along the continuum from counties with an urban population of 20,000 or more to completely rural counties. No distinct pattern is seen in older women under 75 years of age by degree of rurality. Advanced age presents a greater risk of poverty.

Mobility and self-care limitations among older persons do not show a clear pattern of differences by degree of ruralness, even among the oldest old. About 8 to 9 percent of all counties, regardless of metro-nonmetro residential type, are comprised of older women residents who have a mobility limitation and 5 percent or less with a self-care limitation. Obtaining medical care and services for such limitations may vary by residence, being less accessible in more remote areas. Although older women in nonmetro counties are slightly more apt to have a work disability, no residential differences are found in terms of the disability preventing them from working. The share of older women with work disabilities in metro counties is 31 to 33 percent compared with 34 to 39 percent in nonmetro counties, increasing with degree of rurality. The loss of income from a work disability would predispose these older women to fall below the poverty line.

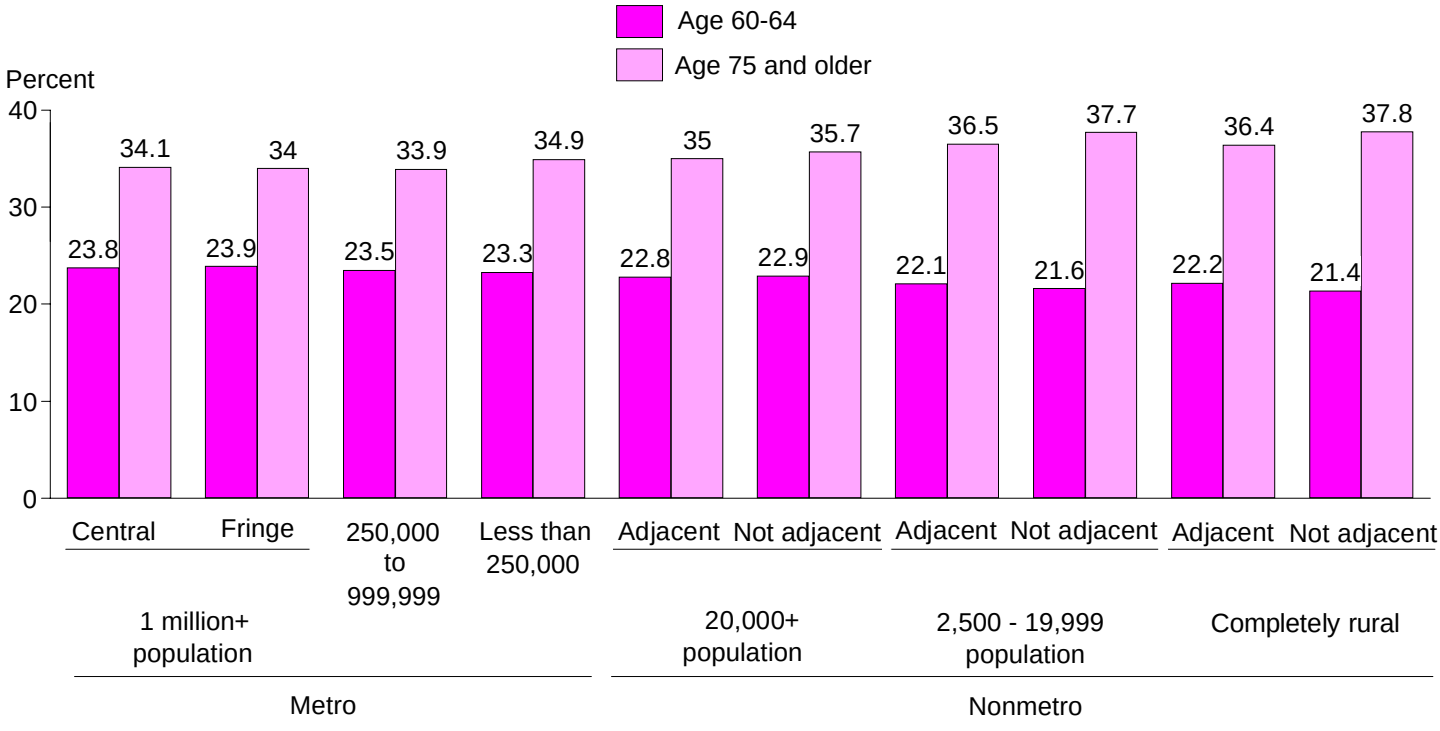
Less-Educated Older Women Reside in the More Rural Counties

Lower educational attainment has an adverse effect on economic well-being. A clear pattern emerges of lower educational attainment with increasing rurality (fig. 5). The share of older women high school graduates in metro counties is 32 to 33 percent. In nonmetro counties, the percentage of high school graduates declines as ruralness increases, from 32 percent in nonmetro counties with an urban population of 20,000 or more, adjacent to a metro area, to 27 percent in completely rural counties. Those with less than a high school education are particularly

Figure 4

Comparison of women age 60-64 with women age 75 and older

The most rural counties have a slightly higher proportion of the oldest women age 75 and older

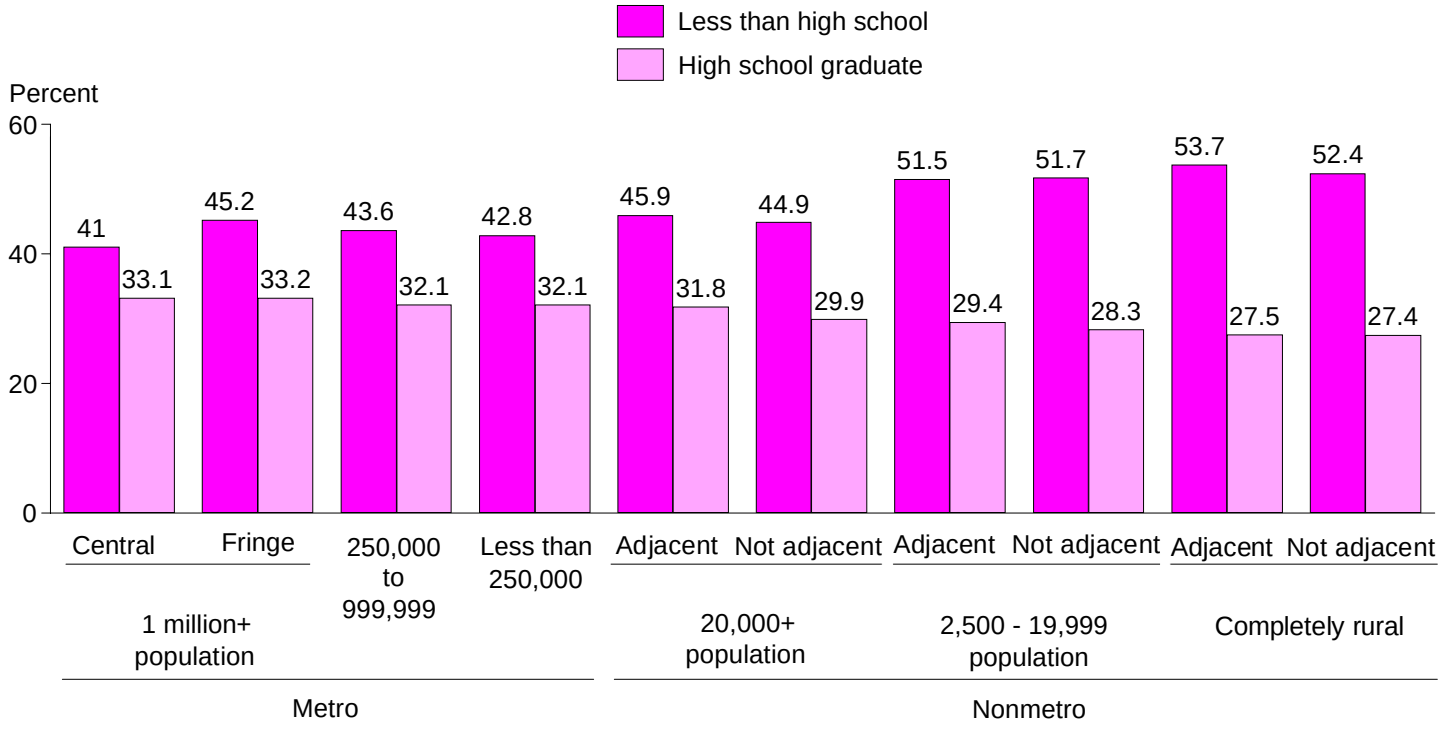


Source: Calculated by ERS from data from the Bureau of the Census, 1990 Census STF4 file.

Figure 5

Educational attainment of women 60 years and older by rural-urban continuum code

Educational attainment decreases along the continuum from most urban to most rural counties



Source: Calculated by ERS from data from the Bureau of the Census, 1990 Census STF4 file.

vulnerable to adverse economic circumstances. While 41 percent of older women in the most urban metro counties have less than a high school education, fully 54 percent did so in completely rural counties, adjacent to metro areas. As expected, the poorest region—the South—has by far the highest share of older women without a high school education and also the lowest percentage having completed high school.

At ages 75 and older, educational differences by rurality are even more striking. The more remote rural counties along the continuum have a larger share of less-educated older women residents, and since a higher proportion of the oldest women do not have high school diplomas, they are at an even greater economic risk. Slightly more than half of women 75 years and older in metro counties have not graduated from high school compared with 56 percent in the most urban of nonmetro counties and 63 percent in completely rural counties. The less-educated older women residents in nonmetro counties are at a financial disadvantage throughout their working lives, with higher poverty and lower retirement incomes. Regionally, the West has both the lowest percentage of older women residents without a high school education as well as the highest percentage having attended college. Again, the South, with its higher poverty, has the highest share of older women with only a high school education or fewer years of schooling. Lower educational attainment and less continuous work history for many older women would result in lower retirement incomes and benefits.

A slightly higher percentage of older women are employed in metro counties (nearly 16 percent in the most urban counties) than in nonmetro counties (12 to 13 percent). Except in the most urban counties on the rural-urban continuum (83 percent not in the labor force), 86 to 87 percent of older women are not in the labor force. By ages 75 and older, almost all women are out of the labor force, with no rural-urban or regional variation. The South has a smaller share of employed older women and a larger share not in the labor force, coinciding with the higher poverty rates in the region. Rural workers in the general population are more likely than urban workers to be below or near poverty.

Higher Poverty Among the Rural Elderly Argues for Public Policy Adjustments in Areas Such as Health and Pension Programs

There is a strong positive relationship between the poverty rates of older women and the ruralness of the county in which they reside. The lower educational levels of nonmetro elders are associated with higher poverty. Other

compositional factors of a county's older population may also affect poverty, but they alone are unlikely to explain the difference in poverty rates between metro and non-metro older residents. The risk of poverty remains greater among the rural elderly. Rural development specialists need to acknowledge differences in well-being by rurality and take into account the special needs of rural women who live alone.

Present-day cohorts of older women spent all or most of their working lives in traditional roles involving limited market work experience. Many older women who worked in the formal labor market experienced interrupted work patterns, including midlife career entry and frequent job changes, which are most often the consequence of child-bearing and child rearing responsibilities. The economic circumstances of many older widows could be improved with different patterns of private savings or government transfers. It is important to understand how several factors, including work history, sex discrimination in the workplace, family roles (especially caregiving), divorce, and changes in pension coverage, influence the retirement income and economic well-being of older women.

Changing patterns in the number and percentage of older residents can substantially affect communities in growth or decline. Changes in tax bases, real estate values, and institutional resources often determine a community's ability to meet the needs of a changing elderly population. The lesser availability of health care and social services may cause a greater number of elderly persons in rural areas to have unmet needs.

An aging U.S. population results in a higher ratio of older persons to working-age persons, thereby increasing the burden of social transfers in public pension and medical care systems. An aging population also increases the need for private transfers of time and energy to care for sick or disabled elderly persons within families. The growing share of the total population in their retirement years will necessitate continuing adjustments in the way demands for health care, housing, economic support, and related social and leisure services are defined, measured, and met. Public policy adjustments and private-sector innovations will be needed in such diverse areas as social security and pension planning, tax policy and savings incentives, technological advances in health care and environment, and even workplace conditions and immigration policies.

For Further Reading...

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Peter L. Stenberg

Rural Communities and Military Base Closures

For the last decade the Department of Defense has been undergoing a process of downsizing, including reducing the number of domestic bases. While most cuts in the number of military personnel have taken place in urban areas, rural areas have taken a proportionate share in the reductions. Although the negative economic impacts from base closures affect all areas, they are often much greater in rural communities than urban communities.

In 1987, the number of domestically based military personnel peaked at 2.8 million; it is now down to just below 2.1 million. The downsizing of the military, as often described in the popular press, has led to the closure of Department of Defense (DoD) facilities across the Nation. Both rural and urban areas have been affected.

During the 1997-98 Congressional session, DoD requested authorization to further reduce the number of military bases. Congress did not give the authorization, pending further study. During the debate, much discussion was raised about what effects the closures have had on local communities.

The effect on communities has varied considerably across the country; some communities have experienced a local economic depression while others have been left only marginally affected. Rural communities tend to have the greatest challenges in recovering from closures.

Base Closures Affect Rural Areas More Than Urban

Over the last 30 years, the number of military personnel has both grown and declined, from a high of 3.4 million during the Vietnam War era to the current low of 2.1 million. The share of military personnel in rural areas, however, changed little. Over the three decades, 18 percent were stationed in rural areas. The current downsizing has maintained this relationship in the proportion of military personnel in urban and rural areas. At the aggregate level, rural areas have taken their share in the reduction of the military.

Military personnel includes active duty personnel, National Guard, and the Reserves. Rural-based, as compared with urban-based, military personnel are marginally more likely to be National Guard and Reserves than active duty personnel. The active duty personnel are taking a relatively greater cut in force size. Because the National Guard and Reserves are mostly part-time, urban areas are taking a little more of the cut in the military payroll at the aggregate level.

Reserve and National Guard activities can be important for some rural communities, as the Army National Guard is in Guernsey, Wyoming [Photo by Peter Stenberg.]

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The author gratefully acknowledges the assistance given by interns Chris Tiedeman, M. Bree Perrin, Greg Aurre, and Stacey Speich in preparing this article.

The aggregate trend, however, masks where the impacts really occur—at the local level. While the reductions in military personnel affect only a small part of the country's economy (military personnel make up less than 2 percent of total employment), in some communities, the share is much larger. Even in a large city like El Paso, Texas, military personnel constitute about 15 percent of total employment. If the civilians employed by the military were included, the share would be much higher. For a smaller city, such as Fayetteville, North Carolina, the military constitutes 25 percent of local employment. For rural communities, a base may be a much larger local employer.

The economies of urban areas with large military establishments, however, generally depend less on military personnel than rural areas. For many rural areas, the economic importance of the military is very great. The military personnel at Fort Riley in Kansas, for example, account for 50 percent of the local employment. Hence, a closure or major reduction can come at a great economic cost for a rural community. While it can often be difficult for an observer to discern the effect of a base closure from an urban community's economic data, the effect is nearly always noticeable from a rural community's economic data.

The Military Bases Currently Going Through Closure

Starting in 1988, the Department of Defense began four rounds of reviews leading to base closures. These reviews are leading to the closure of 102 of nearly 500 major bases. Many smaller bases are also closing or have already closed. In addition, many remaining bases are being realigned (changes in the unit structure at the bases leading to either a reduction or an increase in the number of personnel assigned to a base). Sixteen of the major base closures are in nonmetro counties. These rural and urban closures are the greatest number since the period immediately following World War II.

Military bases are not evenly distributed across the country. The major bases are primarily situated in 282 counties and most of these counties and nearby areas were affected by the closures. Taking into account the realignments that included deactivating military units, most significantly some nuclear missile wings in the Great Plains, all of the 282 counties and their adjoining regions have been economically hurt. The counties most directly affected by closures can be seen in figure 1. Two caveats should be mentioned with respect to the map. Although all but a few States were affected by the closures and realignments, the map shows only the closures. Naturally, States with essentially no or very marginal military presence (Iowa, Minnesota, Oregon, West Virginia, and Wisconsin) were much less affected than States with many large installations. The States with the largest number of military installations are California, Texas, and Virginia.

Fewer bases are closing in rural areas than in urban areas. Rural areas, however, had fewer military bases in the first place and are roughly taking an equal share of the closures. Many of the largest urban areas have been affected by the closures, such as New York City, the San Francisco Bay Area, Los Angeles, Philadelphia, and San Antonio. Most of these closures have been, and in some cases continue to be, discussed in the popular press. Much less well known have been the closures in rural regions, such as K. I. Sawyer Air Force Base near Marquette, Michigan, and Loring Air Force Base outside of Limestone, Maine.

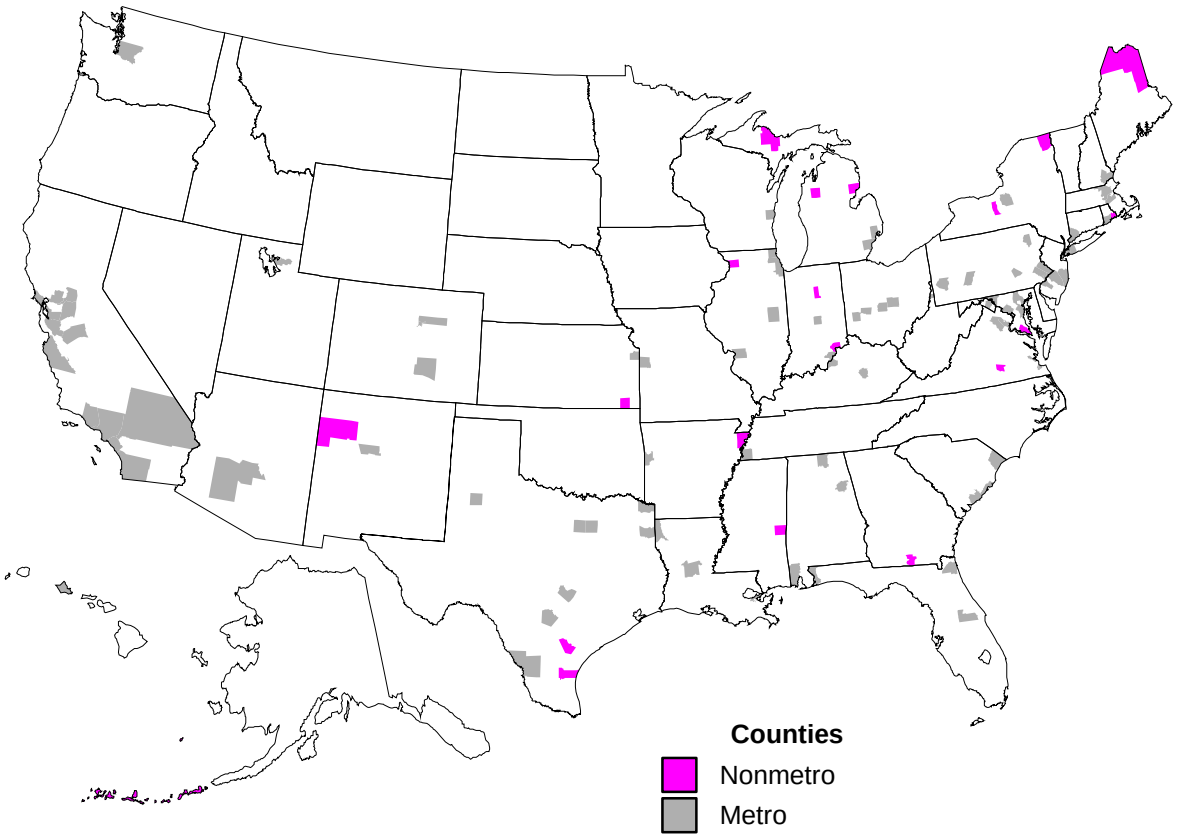
Loring AFB in Maine is one of the rural bases to close in the 1990's. [Photo by Peter Stenberg.]

Some ghost towns are former military bases, as this former army base in the Colorado Rockies (closed in the 1960's). In this case, the property is now owned by the USDA Forest Service. [Photo by Peter Stenberg.]

Figure 1

Bases chosen for closure in 1988, 1991, 1993, and 1995

Many of these bases have already closed. DoD has requested further closures.



Source: Calculated by ERS from DoD information.

Closures Affect Employment, Housing, Education

Nearly all communities are affected in a similar manner by a closure; only the magnitude of the effect differs. Rural communities experience more severe local recessions from closures than large metro areas because rural bases constitute larger shares of the local economy. Urban areas also have the advantage of greater economic diversity and, thus, more economic opportunities for redevelopment of the base site. One consequence is that two-thirds of the urban bases closed during the 1960's and 1970's now have greater onbase employment than before the closures. Only one-third of the rural bases closed during the same period can make this claim.

Rural communities tend to have more variable economies than urban communities in the sense that they are more likely to depend on one industry. As that industry grows or declines through a business cycle or weather cycle, so does the community, as can be seen, for example, in tobacco farming, textile manufacturing, cattle ranching, and wheat farming communities. A military base, on the other hand, tends to have stable employment and income over time. As a consequence, rural communities have especially benefited from the bases' stabilizing affect on their local economies.

During, and soon after, the process of base closure, local employment declines, though the unemployment rate generally does not rise as high as one might expect. Many of the bases' civilian employees either retire or transfer elsewhere. Base personnel's spouses and teenage children leave any offbase jobs they might have, with the result that some of the civilians losing their onbase jobs take new offbase jobs vacated by departing base personnel's relatives. Rural communities' employment generally will undergo a greater rate of decline than urban areas.

Vacancies increase in offbase housing markets, especially rentals, when bases close. The economic value of residential properties is further depressed when base housing becomes available to renters and buyers. Rural communities again are hurt more than urban areas. Rural housing

markets are much smaller in the first place, so military personnel are a much greater portion of the local housing market's clientele. The only exceptions may be booming recreation areas, such as Myrtle Beach, South Carolina, where the Air Force closed a base.

Onbase housing, when it becomes available to the local community, constitutes a much larger share of the local housing stock in rural communities than urban communities. Consequently, the downward economic pressure on rental rates and housing values is greater. Onsite visits to rural bases that have been closed for over 15 years confirm that often not all onbase housing is used again. For example, Presque Isle Air Force Base (Presque Isle, Maine, closed in 1961), Webb Air Force Base (Big Spring, Texas, closed in 1977), and Sioux Army Depot (Sidney, Nebraska, closed in 1967) all have sizable portions of onbase housing essentially abandoned. Their communities, after the closures, were just not large enough to absorb all the housing stock. Rural communities also often have slower growing populations than urban communities. This situation only exacerbates the excess housing stock situation.

With the departure of the military and their dependents, local school enrollments decline, leaving excess capacity in school facilities. Again, rural communities, on average, are affected to a greater extent than urban communities.

Not all military base property becomes redeveloped, as this scene from the former Sioux Army Depot in Sidney, Nebraska, shows. [Photo by Peter Stenberg.]

In many communities, bases are a positive influence on school programs, partly as a result of the base's stable employment and secure income. Military personnel are also active consumers of continuing education programs and have been known to improve local educational standards. Following a closure, rural communities may lose the critical mass needed to maintain some K-12 and continuing education programs.

Environmental Effects

Rural communities have been faced with the daunting task of environmental cleanup. The closure of the Jefferson Proving Grounds near Madison, Indiana, has left that community with a prospective cost of at least $500 million to clear part of the base of unexploded ordinance. Some of the base's land will likely remain off limits forever because the economic opportunity cost is much greater than the returns from putting the land back into use. The land will be left to return to nature with some method of warning for people not to enter the area. Many communities face the same, albeit smaller, problems with bases that are being closed. With the value of the property so low, rural communities are more likely than urban communities to be left with portions of the bases returning no economic rent.

The problem of unexploded ordinance also has come up in communities that had earlier base closures. Only in the last few years munitions were found at other sites. Among the places with these problems were the Black Hills Army Depot (Edgemont, South Dakota, closed in 1967); Sioux Army Depot; and, even, the Nation's capital. The ordinance found in Washington, DC, was cleared from the property. The others have not yet because the economic returns from clearing the land may be too low to proceed fully. In an inspection of sites across the country, the costs of cleaning up most toxic spills and other problems that can be rectified at older sites were estimated to exceed $4 billion.

Among the new closures with environmental problems is the return of an island to native Hawaiians. As part of a recent DoD budget, $50 million was set aside to clear unexploded ordinance from the island of Kahoolawe. The island had been used by the Navy for target practice since World War II.

The Effects of Closures in Three Communities

For the long-term economic impact from a closure, we must ask how well a county might have done if the military base located there had stayed open. To answer the question, onsite visits were made and, using the control group method of analysis, counties where a base closed were compared with a group of counties similar in economic nature to the county prior to the closure. The comparison allows an evaluation of whether the community would have been better off if the base had remained open.

Control Group Method of Analysis and the Case Selection

Control group method of analysis is an extension of a biological and medical sciences statistical method called experimental design (Isserman and Stenberg, 1994). The method compares a treatment group, in this case the county that experienced a base closure, with a control group. The control group are counties that are similar in nature to the treatment county prior to the base closure. The similarity is measured across a spectrum of over 100 economic factors. Using mathematical techniques, the vector of comparisons is reduced to a single statistic called a Mahalanobis distance. The statistic is computed for each county in the country and those with the smallest distance are selected for the control group. The procedure is repeated for each treatment county.

The data demands for this method are necessarily large. The number of counties that can be analyzed is unfortunately small. First, the scope of the analysis required that the effect of the closures be examined over short and long-run periods. This precluded any of the recent closures. In addition, DoD did not maintain records for base closures prior to 1961. This left only bases closed between 1961 and 1981 (prior to the recent closures there had been a period of 10 years when there were no closures). Reliable longitudinal data also does not exist prior to 1969. The control group method of analysis requires several years of data prior to treatment (the closure). Further, the study was limited to bases in nonmetropolitan counties. This left only 6 bases out of the original 100 plus that were closed in the 1960's and 1970's. Of these, the 3 chosen were representative of those 6 as well as the nonmetro bases from the original 100.

Here we examine three military base closures in nonmetro regions at least 20 years ago. Each treatment county is presented separately with a review of its regional economic history, an examination of the county's "macroeconomy," and the results from the control group method of analysis. The three former military bases were Kincheloe Air Force Base in Michigan, Webb Air Force Base in Texas, and Glynco Naval Air Station in Georgia (fig. 2). They represent a diverse set of economic circumstances faced by rural communities in the decades following the period they underwent a local base closure. Onsite visits were conducted by the author at each.

Kincheloe Air Force Base

The site of the former Kincheloe Air Force Base lies in Chippewa County in the Upper Peninsula of Michigan. The county had a 1990 population of 34,800 and covers over a million acres. The region is geographically isolated from the heart of the industrial belt and the rest of the country. Sault Ste. Marie is the county seat and the largest community in the region with a 1990 population of 14,700.

The base is now part of Kinross Township, a community of fewer than 2,000 who live in homes or on farms spread across 121 square miles. Interstate 75 is more than 3 miles away by connecting road. At the time of the base's closure, the Upper Peninsula's resource extractive activities, mining and logging, were experiencing economic hard times.

The base had originally been leased by DoD in 1941 from the county government. The lease agreement required that the land, when returned to the county, be restored to its original condition. In lieu of restoration, the site was returned to the county with all the buildings and nonmilitary equipment, such as trucks, cars, fire equipment, and office furniture free.

The base was the major employer in the county. Before the base closed, 25 percent of the county's population were military personnel or their dependents, according to the Chippewa Economic Development Corporation. The closure meant the loss of 737 civilian jobs and 3,074 military transfers. A year after the closure, according to DoD, 2,144 new jobs were already at the former base.

The county's population began to decline shortly before the closure, quickly dropped during the year of closure (1977), and, as part of the economic fallout from the closure, continued to decline for another 2 years. The county's population has grown continuously since it reached bottom in 1980, though it still remains below the 1976 level.

Employment also declined with the base closure and did not reach the lowest level until 2 years after closure. The county's employment had grown steadily from 1969 to its peak in 1976. After the base closure, employment fell, then dropped further in the recession of the early 1980's. It took 15 years before the employment reached the same level it had been prior to the base closure. The unemployment rate was already high and largely unaffected by the closure. It ranged from 17 to 19 percent in the late 1970's. While unemployment remains high by national standards, in the 1990's, it is half of what it had been in the late 1970's.

Would things have been much different if the base had not closed? What might have been expected if the base had remained open? In other words, how does Chippewa County compare with its control group counties? The county fell behind its corresponding control counties during the late 1970's and early 1980's, reaching the nadir in 1984. In the early 1990's, however, the county's economy significantly exceeded the performance of its control group. The resultant growth meant the overall level of employment no longer significantly differed from the expected. The primary source for the improvement was in the retail sector. Not until the 1990's did the county's economy fully make up the economic loss from the base closure 15 years earlier.

The retail trade sector greatly felt the effects from the closure. Employment in the sector reached its low point in

1979, slightly sooner than the county's total employment did. It then grew fitfully for a number of years. The county did not make up for lost ground from the closure (as compared with its control group) until the beginning of the 1990's. Two factors share the credit for the growth: the opening of a casino on the Bay Mills Indian Reservation in northern Chippewa County and Canadians crossing the border to purchase retail goods in Sault Ste. Marie. By the beginning of the 1990's, the county was not significantly different from the control counties in retail trade employment.

The services industry is another sector of the local economy expected to be severely affected when a local military base is closed. For Chippewa County, however, the sector shows little impact from the closure. One reason may be that new services were created quickly on the base after the closure. These services include a tribal medical center, a hotel (in a remodeled former barracks), and the now-private golf course. It may also reflect the presence of the State prisons built on the former base.

By 1993, 2,300 people worked on the grounds of the former base, according to DOD. Today, the Chippewa County Air Industrial Park constitutes 1,850 acres of the former base including the 852-acre airport, the Chippewa County International Airport. The airport has regularly scheduled commercial passenger service. The remaining 2,371 acres contain the retail and service activities, a large housing area (1,383 housing units, many still unused year round because local workers continued to live where they had before), roads, utilities, a golf course, and a small hotel. Approximately 50 business and government tenants are on the former air base site. Most workers are engaged in government, heavy industry, or light manufacturing activities. The major manufacturing industries produce steel and wood products. The main government operations include the airport and five State correctional facilities.

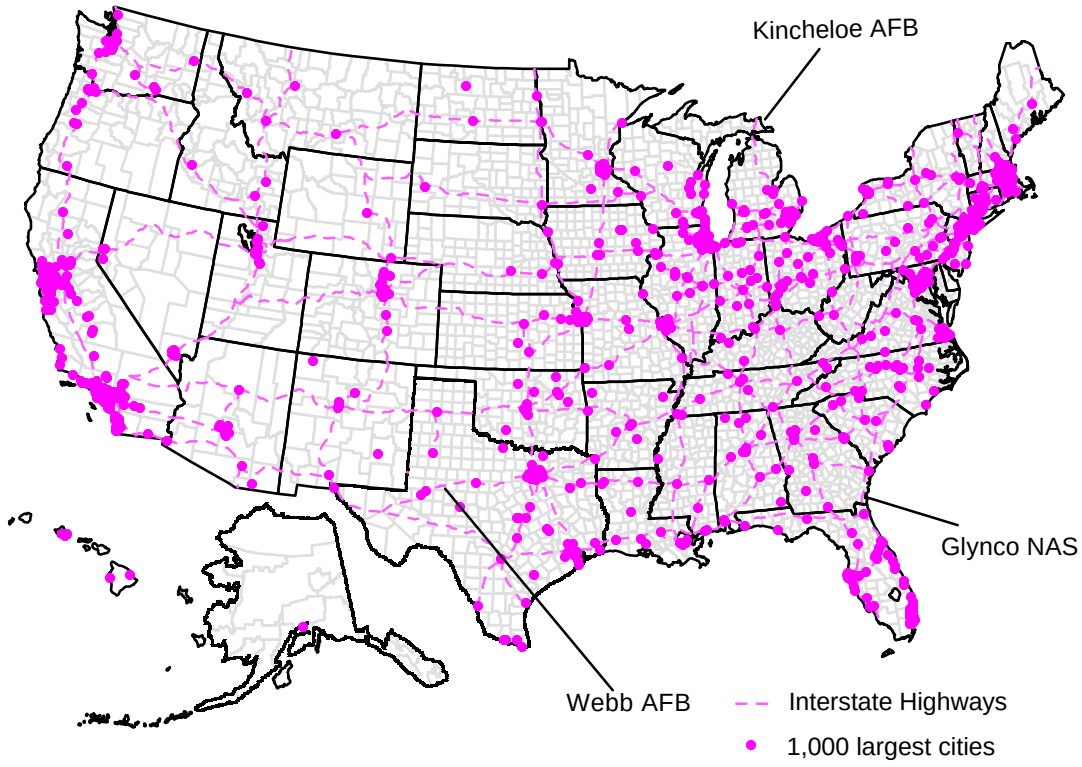
Webb Air Force Base

Webb Air Force Base is on the southwestern outskirts of Big Spring in sparsely populated West Texas. In 1990, 23,100 people lived in Big Spring, the county seat for the 32,200 inhabitants of Howard County.

Figure 2

Location of Glynco Naval Air Station and Kincheloe and Webb Air Force Bases

Each of the three bases presented unique challenges in redevelopment



Source: Caculated by ERS from Atlas Graphics and DoD data.

Big Spring is an oil refining center and a distribution point for locally manufactured oil well drilling equipment. Oil production is a major industry in the economy. The city also functions as the medical center for the region and has five hospitals, including a Veterans' Administration hospital and a State mental hospital. Agriculture is the other major driving force for the economy, especially cotton, hay, and cattle.

The 1977 closure of the 2,311-acre base resulted in the loss of 909 civilian jobs and the transfer of 2,204 military personnel. The base had been the major employer for the county. A year after closure, according to DoD, there were 575 new jobs on the base.

After the city took possession of the base, three buildings were turned back to the Federal Government with the intent that they would become properties of the Federal Bureau of Prisons. The Big Spring Federal Prison Camp, a minimum-security facility, was established in the three remodeled buildings.

The county closed the smaller Howard County Airport and opened a new airport at the site to take advantage of the base's 9,000-foot runways. Some of the equipment and structures at the county airport were moved to the new airport, and the old airport was redeveloped for other uses. In other words, some of the new economic activity at the former base was movement from other locations within the county. The new airport does not have scheduled air passenger service.

The closure took place over a couple of years, but the greatest impact was in 1977. The county's population reached its nadir in 1979. Total employment fell for the county as a consequence of the base closure, but soon regained some of the loss when the oil market began to boom. After the oil bust in 1983, the county's overall economic growth stagnated. The employment level has never fully recovered from the closure.

How well would the county have done if the base had remained open? The county's employment immediately fell significantly below that of the control counties. The cause seems solely due to the closure of the base. The only sector of the regional economy that has taken up a significant amount of the slack since the closure has been the oil industry.

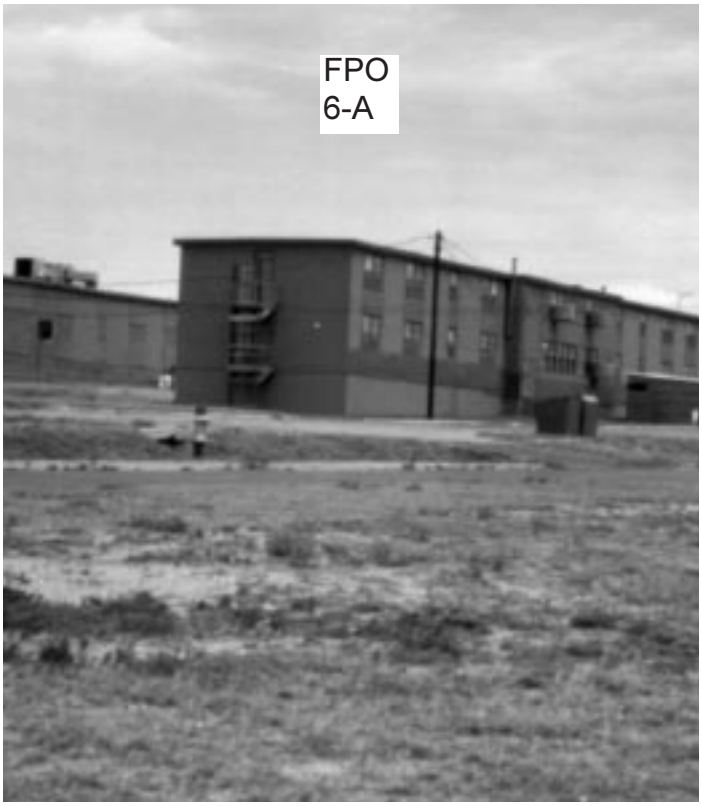
Unlike the experience at Kincheloe, the Federal Government became a major tenant and employer at the former base. The number of Federal civilian employees in the county, though at first declining with the closure of the base, eventually started to grow again when Federal prison facilities opened in 1979. In 1990, the Federal Bureau of Prisons facility was converted to a low-security facility, Federal Correctional Institution Big Spring. The minimum-security-level Federal Prison Camp Big Spring opened nearby in the spring of 1992. The Federal facilities have a staff of 287 and a prison population of over 1,000 in the two facilities as of 1992. Inmates at the prison camp function as labor in support of the main prison facility and of other local Federal agencies.

The closure of the base never significantly affected the off-base retail activity, though there was a slight decline in what would have been expected. Only with the decline of the oil industry did the county's retail market fall significantly below that of the control counties.

The total employment for the county continues to significantly trail the control group. Howard County only briefly recovered from the closure and today is a smaller community. Nevertheless, by 1993, new jobs in aviation, industry, and services had replaced 575 of the jobs lost, according to DoD. By coincidence, that is the same number of jobs as a year following the closure.

Glynco Naval Air Station

Glynco Naval Air Station is in Glynn County, Georgia, population 64,000, and is near the city of Brunswick. The site is near I-95, the primary north-south Interstate on the East Coast. The county is not as economically isolated from the rest of the Nation as are Chippewa and Howard Counties.



Prison facilities, such as this minimum-security facility in Big Spring, Texas, illustrate one use of former military base facilities. [Photo by Peter Stenberg.]

Brunswick, a community of 16,000 and the largest city in the region, was at one time a major seaport and continues to have a sizable fishing and fish (shrimp and crab) processing industry. The Atlantic Ocean resort communities of Sea Island and St. Simons Island lie within miles of the former base. Tourism and a growing retirement community play significant roles in the local economy.

The military remains a major employer within the broader region. Fort Stewart, home of the 24th Army Division, lies within an hour drive to the north. Kings Bay Naval Submarine Base is less than a half-hour drive to the south. Not much farther away, in various directions of the compass, are other major military bases: Moody Air Force Base, Hunter Army Air Field, the Marine Corps bases at Parris Island and Beaufort, and the naval bases at Jacksonville.

The closure of the base resulted in the loss of 1,828 military and 344 civilian personnel. Two years later, 2,500 new jobs were on the base. According to 1993 DoD numbers, approximately 2,700 jobs are now at the former base. The Brunswick-Glynco Jetport is at the site along with Air Force Reserves and the Georgia Air National Guard. The airport has regularly scheduled commercial passenger service. Additional governmental activities include the Federal Law Enforcement Training Center, U.S. Customs, and a Federal Job Corps Center. Construction, manufacturing, trucking, and services companies, including at least one foreign-owned firm (Japanese), comprise the private firms at the site. The former base is undergoing further growth from the private sector. The Job Corps facility is also expanding.

The Federal Law Enforcement Training Center (FLETC) is a major contributor to the local economy. A report by DoD's Office of Economic Assistance indicates 26,500 trainees a year visit the site. Over 50 Federal agencies send personnel for training at the site. For example, the Bureau of Prisons established its Staff Training Academy at FLETC in 1981. All new employees of the Bureau of Prisons take a 3-week course there at the beginning of their employment. Additional training for other employees of the Bureau is also taken at FLETC.

Did Glynn County do as well as if the base had remained open? Glynn County, unlike the experiences of the other two case studies, quickly caught and surpassed its control counties over most types of economic activity. Total employment in the county after the base closure trailed that of the control counties. Employment, however, grew at a faster rate than in the control counties and now slightly leads them.

Recovery for the county came primarily from two sectors, retail trade and services, both connected to tourism, training, and convention business activities. Employment in the county's retail trade sector declined briefly with the base closure, but has grown ever since. The retail trade employment level fell significantly below the control counties during the period of the closure. Growth in the sector, however, was greater for Glynn County and the relative employment level is now a bit greater than for the control counties. The service sector experienced an identical growth pattern relative to the control counties.

Recovery From Closures Has Been Uneven, but Federal Aid, Transportation Advantages Have Helped

Each community followed different paths in its recovery. In each case, the Federal Government offered assistance in the form of advice and financial support. In two of the cases, the Federal Government directly replaced lost jobs, something that will occur less often with the current Federal downsizing. The two smaller communities had the most difficulty recovering from the closures. Glynn County seems to have clearly done better without the base than if it had remained.

Chippewa County simultaneously experienced a number of major disruptions to its economy and only more recently has returned to the level of community economic activity it had before the base closure. Its road to recovery, though, held a fairly steady upward course once the initial shock was absorbed. Unlike the other two counties, no real Federal presence (in terms of new Federal employment activity) was used to offset the base closure. The State, however, with the employment opportunities afforded by the building and running of State correctional institutions, helped by directly replacing some of the lost jobs.

Howard County, unlike Chippewa County, had a more robust local economy (outside of the military base) at the time of closure. The Federal Government directly replaced jobs with the establishment of Federal prisons at the former base. Difficulties, though, came later with the collapse of petroleum prices in the international oil market. The growth of the oil industry compensated for the closure. The loss of the base, though, meant they no longer had it as a stabilizing force in the local economy. As a consequence, the collapse of the oil market was more greatly felt across the community. The community and its economy remain smaller than before the closure. It is also the only one of the three communities to be without commercial passenger air service, further putting it at a disadvantage in today's economy; the nearest airport with regularly scheduled service is Midland-Odessa, an hour away by car.

Glynn County had two sources for its recovery: tourism and government activities. The county successfully took part in the Nation's growth in tourism activity and retirement communities. The major State and Federal Government activities in the county also helped the local economy. The naval base had been a relatively smaller factor in the county's economy than the Air Force bases had been

for the other two counties examined, so the closure likely had a less initial negative effect on the local economy. The county very quickly recovered and has grown steadily since the closure.

These three cases point to some useful generalizations for military installations. All have good transportation infrastructure connecting them to the rest of the region and the country. As part of the country's defense system, bases must have transportation infrastructure sufficient to keep them supplied and able to carry out their military missions during a major crisis. Besides their airport facilities, the bases also had extensive road and highway systems. In each case, they had easy access to the Interstate Highway system. Many other bases also have excellent roads and highways, air strips, and railroad lines.

Closure of the bases did not cause the economic catastrophe that some had predicted. On the other hand, these bases also did not experience the rapid growth in new economic activities predicted by DoD forecasts or in the upbeat media coverage.

Conclusions

In 1997, the Secretary of Defense requested Congressional authorization to begin two more rounds of reviews leading to more closures. Congress did not act, but instead requested further study on the effect of the closures. Earlier base closures indicate that rural communities have greater challenges than urban communities in recovering from losing their military installations.

While there is always a negative economic impact for a community with a base closing, the closure also offers new economic opportunities. The range of economic opportunities varies across communities and is one factor that should be considered when there are closure evaluations. Communities that have greater economic opportunities will have greater potential economic growth after closures, will need less Federal and State assistance in redevelopment, and the Nation's economy will also benefit if properties with the highest rate of economic return are chosen over other properties for closure.

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Dennis M. Brown

Rail Freight Consolidation and Rural America

Deregulation in the rail freight industry has brought cheaper, faster, safer, and more efficient rail service, but reduced competition in rail service and an increase in the number of abandoned routes have hurt some rural areas. Specific strategies to counter negative effects of rail consolidations are available, including the establishment of small railroads, greater Federal and State involvement, and the Rails-to-Trails program. As the Nation's rail industry becomes more concentrated among fewer major carriers, these approaches are likely to become more important.

The Nation's railroads are booming. Deregulation of the industry in 1980 gave major railroads more freedom to restructure their operations, and many companies have boosted profits by holding down costs. Efficiency has also increased through a number of high-profile mergers (Berndt and others, 1993). Although consolidation, a product of deregulation, is often associated with cheaper, faster, safer, and more efficient rail service, gains have come at the expense of some smaller rural communities, as rail service has been cut back on underused branch lines. Some rural industries that rely on railroads also fear that consolidations may increase their transportation costs.

This article seeks to better explain how consolidations in the rail freight industry have affected rural America. First, a historical overview of the Nation's rail network is provided. Next, the impacts of rail consolidations in rural areas are described and various strategies for dealing with cutbacks in rail service are discussed. The article concludes with a statement of how future consolidations may affect rural areas.

Railroads Have a Long History in America

The first railroad in the United States was the Baltimore and Ohio, which started carrying freight and passengers in 1830. Other railroads soon followed, and by the 1840's, a period of rapid railway building commenced. By the 1860's, the major transcontinental routes had largely been completed, and many rural communities aggressively competed with each other to ensure service. Competing rail companies, anxious to expand their share of the rail network, extended their service to most of these towns, resulting in a considerable amount of overbuilding in the Nation's rail infrastructure, particularly in parts of the Midwest.

Construction continued into the 1890's, and by the early 20th century, railroads had become the dominant means of moving people and freight in rural America. By 1916, the national network reached an all-time peak of 254,251 miles (fig. 1). However, due to the earlier overproduction of rail lines and the popularity of the new local road system, railroads started to lose their dominance of intercity transportation by the 1920's.

In the post-World War II period, railroads continued to decline in relative importance as other transportation modes—trucking, pipelines, waterways, and air transportation—became more popular. Many railroads were also struggling under Federal regulations, with the Interstate Commerce Commission overseeing virtually all freight rates, track abandonments, and merger issues. Regulation stemmed from the Federal Government's concern that dominance of the Nation's rail network in the

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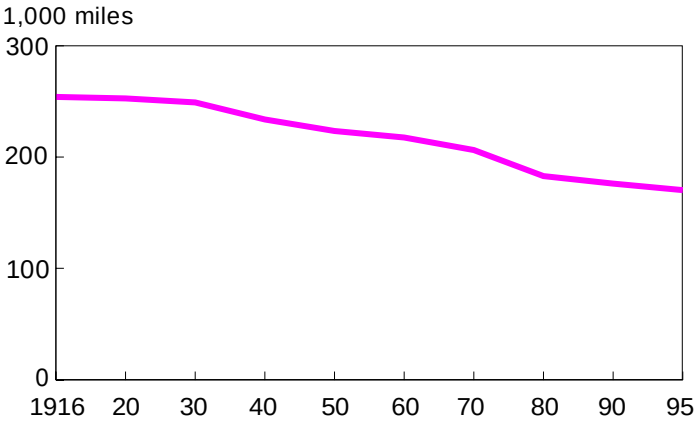
Figure 1

Railroad miles in the United States, selected years, 1916-95

Mileage has declined throughout the century



Source: Association of American Railroads, *Railroad Facts*, (various years).

early part of the 20th century by just a few railroads would hurt rail service and freight rates.

By the late 1960's, many rail lines were struggling with high labor costs, strict work rules, and Federal regulations requiring them to provide passenger service. In 1970, the Nation's then-largest railroad, the Penn Central, went bankrupt. Congress responded by providing $3.2 billion in subsidies to maintain service on what became the Consolidated Rail Corporation (commonly referred to as Conrail). Pressure from the railroad industry also led to passage of the Rail Passenger Services Act in 1970, which established Amtrak and removed the freight carriers' responsibility of providing passenger service (although freight railroads provided track access and personnel to Amtrak). Service on Amtrak began in 1971.

Faced with mounting losses, the Nation's major railroads asked Congress for regulatory relief in the late 1970's, prompting deregulation of the industry in 1980 under the Staggers Rail Act. By allowing railroads to increase their profits and giving them more freedom to set their own routes, rates, and schedules, rail freight service under the Staggers Rail Act has generally become cheaper, faster, and more efficient. And, in spite of recent safety concerns on some lines, the Nation's rail freight network has been safer under deregulation. Shippers and farmers benefited, too, from lower transportation costs (Forkenbrock and others, 1990).

Under deregulation, a number of high-profile mergers have taken place in recent years, as illustrated by the July 1996 $5.4-billion merger between Union Pacific and Southern Pacific railroads, the Nation's largest-ever transportation merger. With a 31,000-mile network, stretching from the Mississippi River to the West Coast, the Union Pacific/Southern Pacific merger created the Nation's largest railroad, which is now one of only two major railroads operating west of the Mississippi. The other is the Burlington Northern/Santa Fe line, also a product of a recent (1995) merger. In the East, CSX and Norfolk Southern appear ready to take over Conrail (as of this writing), pending approval by the Surface Transportation Board (which replaced the Interstate Commerce Commission in 1996 as the Federal agency responsible for overseeing rail merger issues). If Conrail is split up, some have predicted that one more round of mergers is possible, as the two remaining western rail giants (Union Pacific and Burlington Northern/Santa Fe) consolidate with the two remaining eastern rail giants (CSX and Norfolk Southern), leaving the Nation with only two massive rail companies operating coast to coast.

Rail Consolidations May Threaten Rural Economic Development

Consolidations can have a number of negative effects. Farmers, shippers, and grain elevator operators may pay higher transportation rates, and U.S. competitiveness in foreign trade can be impaired. Although trucking remains the primary means of moving farm and food products, its cost per dollar of output is significantly higher than the cost of rail, the second most common mode of agricultural transportation. Barge transportation can effectively compete with railroads, but it is limited to routes served by waterways. Consolidations, especially when they lead to decreasing competition in rail service, therefore, can raise the cost of marketing agricultural products and may reduce agricultural income, raise rural unemployment, and jeopardize economic development potential. The local environment can also become degraded by the use of less energy-efficient modes of transportation, such as trucking. State and local governments could face higher expenditures for rural road and bridge maintenance and lower property tax revenues.

Mergers can also disrupt rail service, potentially threatening timely shipments of agricultural commodities. This was a big issue in late 1997 when shipments on the newly merged Union Pacific and Southern Pacific lines slowed down, initially due to congestion in South Texas. The problem quickly spread to other parts of the Nation's rail network. Transportation officials characterized the slowdown as a "transportation emergency" because of the possible negative effects on that year's record grain harvest.

Reduced Competition

In many rural areas, rail is the cheapest mode of transporting bulk commodities, such as grain or coal. Decreased competition in rail service may increase ship-

ping costs, especially if oligopolistic or monopolistic pricing exists (MacDonald, 1987). The risks of reduced competition are especially significant for communities currently served by two railroads that may lose one of their lines due to a consolidation (Winston and others, 1990). But the evidence on how markets are affected when three railroads reduce to two, a concern for some communities during the recent Union Pacific/Southern Pacific merger, is still inconclusive. While economic theory suggests that two-firm markets might encourage tacit collusion in freight rates, this is often not the case in the rail industry, partly because most railroads appear to remain secretive about their prices and service offerings. Nevertheless, reduced competition in rail service is not a risk-free proposition for most rural communities.

Abandonments

Deregulation gave railroads more flexibility to abandon routes deemed to be unprofitable. Immediately following passage of the Staggers Rail Act of 1980, abandonments increased sharply for major railroads, growing nearly 140 percent during 1980-85 compared with the previous 20 years (although the pace of abandonments slowed considerably during the latter half of the 1980's). But little evidence exists that abandonments have serious long-term economic consequences for rural communities (Due and others, 1990). Most studies of the effects on the community of abandoning rail service show that small communities are usually affected more psychologically than economically (Fruin, 1992). Although abandonments have been found to hurt communities economically in the short run, few communities have been hurt in the long run because reasonably priced transportation alternatives, usually trucking, are almost always available (Due and others, 1990). And although past abandonments have increased transportation costs for some agricultural inputs, most notably fertilizer, the extra cost has been insignificant for agriculture overall, less than 1 percent of total farm production costs (Fruin, 1992).

One of the most detailed community impact studies of rail abandonments was conducted by H. Barry Spraggins. From a survey of 19 abandonments in Minnesota during 1966-75, affecting 43 neighboring areas, Spraggins found that only a few firms and communities were hurt significantly from the loss of rail service. Most businesses in these 43 communities, mainly grain elevators, were not hurt because trucking was an economically viable transportation alternative for short distances. Fairly typical was the experience of Winsted, Minnesota (1990 population of 1,600), which lost service in 1970 when the Chicago and North Western Railroad ceased operations between Golden Valley and Gluek. Located in rural McLeod County, 40 miles to the west of Minneapolis, most of Winsted's rail traffic was agricultural. Although some local businesses, especially food processors, were concerned about the possible harm of an abandonment, Spraggins found no adverse, long-term local impact of the loss of rail service. Most goods were simply shipped 15 miles to the nearest rail facility by truck at no significant additional cost.

Abandonments are usually more common with a parallel merger, one in which consolidating railroads serve many of the same communities, because the new network often entails some overlap in rail service. For example, the establishment of Conrail in 1976 resulted in some small communities losing rail service, such as the northwestern Pennsylvania town of Grand Valley (1990 population of 100), as the Penn Central and smaller lines serving the same region were consolidated into one railroad. In contrast, end-to-end mergers, those in which merging lines serve primarily different regions and communities, usually have fewer abandonments because the new network has less duplication of services among the merging railroads. This was primarily the case when Burlington Northern/Santa Fe was formed in 1995. Since deregulation, most mergers have been end-to-end, suggesting that abandonments since 1980 may have been more numerous had there been more parallel mergers (Berndt and others, 1993).

Passenger Service

Rail freight consolidations may also put rural passenger rail service at risk. Freight railroads own the vast majority (95 percent) of track on which Amtrak operates passenger service, and abandonments by a "host" freight line that owns the track can affect the provision of passenger rail service. The problem for communities losing service in this way is that often little can be done to prevent a freight line from closing a route if it so chooses. This was the case in September 1995 when Batesville, Mississippi, permanently lost its passenger rail service due to a business decision by the owner of the line, Illinois Central Gulf, to move the route westward, even though ridership levels on Amtrak were otherwise sufficient to maintain continued service.

What Can Be Done to Offset the Negative Effects of Consolidations?

Specific strategies to offset the negative effects of railroad consolidations are available.

Small Railroads

One way that rural areas have been able to prevent some of the negative effects arising from consolidations has been to establish "small railroads." The Staggers Rail Act created specific mechanisms by which portions of a major railroad (that is, Class I lines, with 1995 annual revenues of at least $255.9 million) that were to be abandoned could be sold to local interests as small ("short-line") railroads, with 1995 annual revenues less than $255.9 million. These provisions allowed major railroads to more easily stream-

line their operations and offered local entrepreneurs a chance to profit from local operations. At the same time, they ensured that smaller communities would continue to be served by rail service in the face of what would otherwise have been an abandonment. Since deregulation, numerous small railroads have been expanded or established on routes that were either abandoned or faced abandonment. These have grown nationally from 18,255 miles in 1980 to 45,300 miles in 1995, accounting for more than a quarter of all track mileage in 1995 (fig. 2).

Small railroads offer the advantages of lower labor and operating costs, and they generally allow for greater flexibility in marketing and service. Also, because these lines are often owned locally, small railroads can foster a source of pride and greater community involvement in the railroad. Although startup costs for small railroads can be high and their financial viability often depends on local economic conditions, a number of rural areas facing abandonments have preserved rail service by establishing a small railroad. One community that benefited in this way was Phillipsburg, Kansas (1990 population of 2,800), located in the north central part of the State. In 1982, the town was faced with an abandonment when the Rock Island Railroad went bankrupt, but it was able to keep its rail service after the establishment of the Kyle Railroad. Operating on 780 miles of track formerly owned by the Rock Island line, the Kyle serves various farming communities in northern Kansas and eastern Colorado, and specializes in hauling shipments of grain.

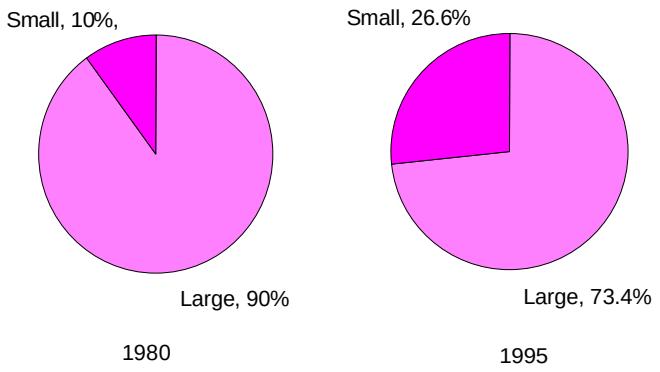
Government Involvement

Since the 1970's, the Federal Government has been an important source of financial assistance for areas facing cutbacks in rail service (Due and others, 1990). Under the U.S. Department of Transportation's Local Rail Freight Assistance program, money has been provided to States for the maintenance of rail lines when consolidations have taken place, with program funds used to conduct rail planning activities, acquire railroads, and rehabilitate existing rail facilities. In fiscal year 1995, $10.4 million was made available under this program, although its future funding remains unclear. Federal funding has also been provided through programs run by the Department of Agriculture, the Economic Development Administration, and the Small Business Administration, although funding levels have been sharply cut back in recent years.

Figure 2

Percentage distribution of railroad miles operated by size, 1980 and 1995

Small railroads have grown in importance since deregulation



Source: Association of American Railroads, *Railroad Facts*, (various years).

Short of disapproving a merger outright, the Federal Government can mitigate some negative effects of a rail merger by imposing specific requirements as preconditions for approval. For example, one way to preserve competition in rail service under a proposed merger is to require "open access," a strategy that allows competing railroads and shippers to use a consolidating railroad's tracks, thereby preserving local competition in some markets. Alternatively, competition can be preserved by requiring a merging railroad to sell a portion of its tracks to a competitor. Both strategies were mentioned as possibilities for an earlier proposed merger between CSX and Conrail.

State and local governments have also been active in reducing some of the negative effects of consolidations, mainly through the purchase of rail lines that were set to be abandoned. For example, establishment of the previously described Kyle Railroad was made possible through financial support from the State of Kansas, administered through the Mid-States Port Authority, an entity created in 1980 so that rail service could be preserved in northern Kansas, following the Rock Island bankruptcy. Similar efforts have been undertaken in other States, such as South Dakota, New Hampshire, and West Virginia.

Rails-to-Trails

By some estimates, 2,000-3,000 miles of track are abandoned annually as freight lines attempt to make their operations more profitable. The Rails-to-Trails program, in existence since 1986, attempts to compensate for some of the negative effects associated with these abandonments by converting the unused track into recreational uses, such as hiking, biking, running, skateboarding, roller skating, snowmobiling, horseback riding, and cross-country skiing. One town that benefited from this program is Marion, Indiana (1990 population of 32,000), located about midway between Indianapolis and Fort Wayne, which lost a significant share of freight and passenger rail service in 1986 when the host carrier, Chesapeake & Ohio (renamed CSX), rerouted its line through Indianapolis. Local residents decided to make the most of this loss by converting large portions of the abandoned rail line into recreational use through the Rails-to-Trails program.

To establish a "rail-trail," local or State authorities must initially acquire the "right-of-way" of the abandoned track from local landowners, with costs typically ranging between $10,000-$40,000 per mile. This is done under the process of "rail banking," in which a local or State agency keeps the abandoned routes for possible railroad use, but allows them in the interim to be used as recreational trails. Improvements must then be made on the track by upgrading or converting it for recreational use (for example, by laying wood chips or asphalt, or modifying bridges). Typically, funding for this comes from a variety of State and local sources or foundations, although the Federal Government sometimes also provides assistance.

Rail-trails have many benefits. Public use is generally controlled on the abandoned route through strict rules excluding unwanted motorized vehicles (other than snowmobiles). Also, proponents argue that rail-trails enhance property values, and are important in reviving local pride, especially in the face of abandoned rail service. Local landowners often oppose rail-trails because opening public right-of-ways might encourage unintended and undesirable use of the trails. But the program has been quite popular among users, with the national rail-trail system being used approximately 75 million times annually.

Conclusions

Faced with increasing competition from trucking, pipelines, waterways, and air transportation, the Nation's rail network has been steadily decreasing in size from a peak of 254,000 miles in 1916 to only about 170,000 miles by 1995, a 33-percent reduction. This trend continued after the Staggers Rail Act of 1980. Deregulation has brought cheaper, faster, safer, and more efficient rail service, but some rural areas have been hurt by reduced competition in rail service and an increasing number of abandonments. Some specific strategies to counter negative effects of rail consolidations are available, including the establishment of small railroads, greater Federal and State involvement, and the Rails-to-Trails program. These strategies are likely to become more important as the Nation's rail industry becomes increasingly concentrated among fewer major carriers.

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H. Frederick Gale, Jr.

Rural Manufacturers in the Export Market

A new nationwide survey of manufacturing establishments provides information about patterns of exporting by rural and urban businesses. About half of nonmetro establishments reported exports in 1995 that amounted to 10 percent of nonmetro manufacturing shipments. Large plants account for most exports. Nonmetro exports of metal products, machinery, and electrical and transportation equipment are about equal to exports by natural resource-based industries. Nonmetro plants are slightly less likely to export than metro plants, but the difference disappears when other characteristics are taken into account.

Exports are viewed as a measure of business success and economic vitality. Overseas sales expand the market for domestically produced goods and services, bringing additional jobs and income to the domestic economy. Much Federal and State economic policy concerns itself with encouraging exports. Although many studies have estimated the national and regional effects of exports, there has been little information about the extent to which exports benefit rural areas. We also know relatively little about which types of businesses participate in export markets. This article uses a recent nationwide survey of manufacturing plants to investigate the extent of exports among rural and urban establishments (see "The Data"). The relative isolation of rural locations and distance to ports are barriers that could make it more difficult for rural businesses to participate in world markets. The rural economy's mix of labor-intensive industries is vulnerable to imports from low-wage competitors, but we know little about how much rural manufacturers benefit from exports. Given today's increasingly globalized economy, the extent of participation in export markets by rural businesses is an important indicator of future prospects for the rural economy.

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Half of Nonmetro Plants Export

About half of nonmetro manufacturing plants sold at least part of their shipments to customers outside the United States in 1995 (table 1). A slightly higher share (57 percent) of metro plants had exports, revealing a modest "export gap" between metro and nonmetro plants. For most plants, their exports are a small share of their shipments. Only 8 percent of nonmetro plants exported 25 percent or more of their shipments, and 18 percent exported 10-24 percent. About half of nonmetro plants with exports sold less than 10 percent of their shipments overseas. The average percentage of shipments exported by a nonmetro

Table 1

Exports by nonmetro and metro manufacturing plants, 1995

Half of nonmetro manufacturing plants are active in the export market

Item	Nonmetro	Metro
	Percent	
Plants with exports, 1995	49.8	56.9
Average share of shipments exported		
Establishment-weighted	6.6	8.7
Shipments-weighted	10.3	11.3
	Billion dollars	
Estimated dollar value of exports	63.8	299.2

Source: Estimated from ERS Rural Manufacturing Survey data.

The Data

The ERS Rural Manufacturing Survey (RMS) is a nationwide study of factors affecting competitiveness of rural and urban businesses. The RMS includes extensive information provided by 2,844 nonmetro and 1,065 metro establishments in all manufacturing industries. The data were collected by a combination of telephone interviews and mail questionnaires in 1996.

Among other questions, the RMS asked respondents, "About what percentage of the total value of your 1995 final shipments went to customers in the following three places: local destinations within a one hour drive; destinations elsewhere within the United States; or destinations outside the United States?" This analysis of exports is based on the percentage of shipments to destinations outside the United States. The value of exports was estimated by multiplying the reported export percentage by the value of 1995 product shipments reported by the respondent. Sample weights were used to obtain estimates of industry totals from sample data.

Comparing this study's estimates of exports and shipments with Census Bureau totals suggests that this study's estimates are lower than the true values. Total 1995 U.S. manufactured exports estimated from the RMS sample are $364 billion. A similar estimate of manufactured exports for 1993 (the most recent available) from the Census Bureau is $401 billion. This value is $37 billion higher, but it is within a 95-percent confidence interval for the RMS estimate. Ratios of exports to shipments are similar to Census values.

manufacturing plant was 6.6 percent. Metro plants averaged a slightly higher 8.7 percent. Exporters tend to be larger than nonexporters, so this average understates the share of total manufacturing output exported. When the average is computed weighting each plant by its value of shipments, we find that approximately 10.3 percent of nonmetro manufacturing shipments were exported, compared with 11.3 percent of metro shipments.

Total nonmetro-manufactured exports are estimated at nearly $64 billion. This estimate is subject to sampling error, but we can say that the true value lies between $54 billion and $73 billion with 95-percent confidence. This likely understates the value of exports, since some products may be purchased by a domestic business and then sold overseas. Other products may serve as intermediate goods to manufacture final products that are then exported. On the other hand, the value of exports by rural manufacturers overstates the impact of exports on the rural economy when exported goods are made with components or materials that are imported or purchased from urban suppliers. Nevertheless, exports certainly play an important role in the nonmetro manufacturing sector.

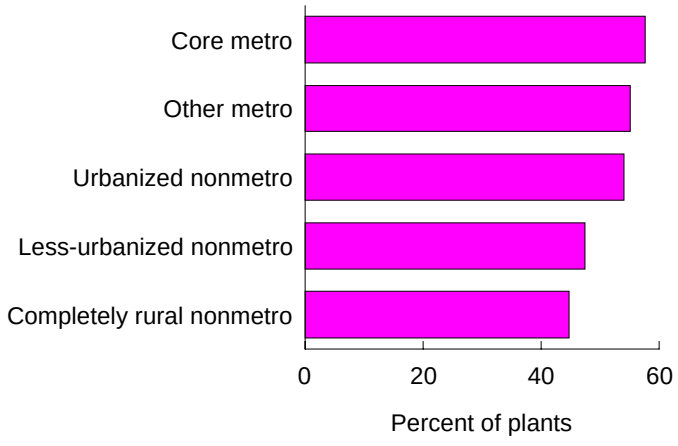
Manufacturing plants report growing participation in export markets. Forty-three percent of nonmetro establishments had export sales in 1992, 7 percentage points lower than the 50 percent who reported having exports in 1995. A similar increase was reported by metro plants. Bernard and Jensen (1995) found that plants frequently move in and out of the export market. The data in this study show more plants started than stopped exporting between 1992 and 1995. Fourteen percent of nonmetro plants reporting no exports for 1992 were exporters in 1995. Only 3 percent of 1992 exporters did not export in 1995.

Nonmetro Plants Produce 18 Percent of the Dollar Value of Exports

Breaking down exports by the level of urbanization shows that, even in the most rural areas, a large portion of manufacturing plants have export sales. An average of 45 percent of plants in “completely rural” counties have export sales (fig. 1). The percentage with exports climbs to 58 percent in “core metro” counties—the largest urban areas. About 55 percent of plants have exports in “urbanized” nonmetro counties and in “other metro” counties—those in metro areas with a population under 1 million (see “Rural-Urban Codes”).

About 18 percent of the dollar value of exports comes from nonmetro areas. That includes 6 percent from urbanized

Figure 1
Share of plants with exports by urbanization
Plants in more urbanized counties are more likely to export



Source: ERS Rural Manufacturing Survey.

nonmetro counties, 11 percent from less urbanized counties, and only 1 percent from completely rural nonmetro counties (fig. 2). The bulk of exports originates in large cities, with 55 percent from core metro areas and 28 percent from other metro areas.

The percentage of shipments exported increases with urbanization, but exports are still an important component of rural manufacturing output. Exports are 9.5 percent of shipments for completely rural counties and 11.5 percent in core metro areas. Even though completely rural areas account for a tiny share of all exports, those exports are a significant part of their manufacturing output.

Exporting Important in All Industries

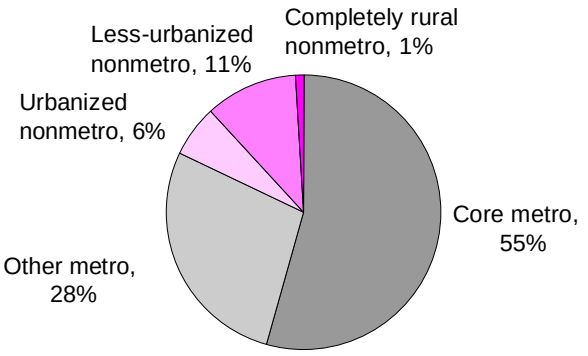
All industries have a significant share of nonmetro plants participating in the export market (table 2). The percentage of nonmetro manufacturers with exports is as high as 84 percent in the instruments industry (SIC—Standard Industrial Classification—38), followed by 77 percent of electrical equipment manufacturers (SIC 36). The percentage of plants with exports is as low as 26 percent in stone, clay, and glass (SIC 32), 34 percent in the lumber and wood products industry (SIC 24), which is largely made up of logging operations and sawmills, and 35 percent in printing and publishing (SIC 27, excluding newspapers). The percentage ranges between 40 and 60 percent in most other industries.

The average share of shipments exported ranges from as high as 18-21 percent in leather, instruments, and industri-

Figure 2

Share of manufactured exports by urbanization

Nonmetro plants account for 18 percent of manufactured exports



Source: ERS Rural Manufacturing Survey.

Table 2

Nonmetro manufactured exports by industry, 1995

Food processing is the largest source of nonmetro manufactured exports

SIC code	Industry	Export plants[1]	Export ratio[2]	Export value[3]
		Percent		Billion dollars
20	Food and kindred	40	10	11.9
22	Textile mills	55	6	1.6
23	Apparel	45	7	1.4
24	Lumber and wood products	34	9	4.2
25	Furniture and fixtures	51	7	1.6
26	Paper and allied products	45	9	3.6
27	Printing and publishing[4]	35	5	.8
28	Chemicals	62	11	3.4
29	Petroleum and coal products	47	1	.2
30	Rubber and misc plastics	61	9	2.7
31	Leather and leather products	61	21	1.0
32	Stone, clay, and glass	26	8	1.8
33	Primary metals	48	7	3.6
34	Fabricated metal products	54	11	4.3
35	Industrial machinery	61	18	9.0
36	Electrical equipment	77	15	4.6
37	Transportation equipment	60	13	5.8
38	Instruments	84	20	1.4
39	Miscellaneous manufacturing	70	1	1.9

SIC = Standard Industrial Classification.
[1]Plants reporting export sales greater than zero.
[2]Exports as a percentage of shipments.
[3]Estimated total dollar value of nonmetro industry exports.
[4]Excludes newspapers.
Source: Estimated from ERS Rural Manufacturing Survey data.

Rural-Urban Codes

This analysis uses a modified version of the ERS rural-urban continuum. Plants are classified according to the type of count where they are located. Metro refers to counties located in Metropolitan Statistical Areas (MSA's).

Core metro: Central counties of an MSA with population of 1 million or more.
Other metro: All other metro counties.
Nonmetro urbanized: Urban population 20,000 or more.
Nonmetro less urbanized: Urban population of 2,500 to 19,999.
Completely rural: Fewer than 2,500 people in urban places.

al machinery and equipment industries to as low as 1 percent in the petroleum and coal products industry. The share of shipments exported tends to be highest in industries that make machinery and equipment for industrial uses, such as plumbing and heating equipment, metalworking and special industrial, electric distribution equipment and electrical industrial apparatus, measuring and controlling devices, and medical instruments. Consumer and natural resource products usually have lower export ratios.

Rural development advocates often focus on natural resource-related exports because these are the largest nonmetro manufacturing industries, and use farm and forest products grown in rural areas. These industries are also the leading source of nonmetro exports in dollar value. Food processing is the leading nonmetro export industry, with exports estimated at $11.9 billion for 1995, of which $4.4 billion was from meat products. Lumber and wood products, furniture, and paper industries together account for over $9.4 billion of nonmetro exports.

Industries that make equipment and parts for industrial use are also an important source of nonmetro exports because these products are usually the most competitive U.S. products on world markets. The second largest source of nonmetro exports is industrial machinery, with an estimated $9 billion of exports. Transportation equipment ($5.8 billion of exports, primarily motor vehicle parts and equipment), electrical equipment ($4.6 billion), and fabricated metal products ($4.3 billion) are also important nonmetro export industries. The exports of these industrial equipment industries combined account for about one-third of nonmetro exports, about the same share as food, lumber, furniture, and paper products. Rural economies can benefit from the opening of foreign markets for U.S. manufactures, from growth in overseas food demand, and from industrial development in other countries, which will boost demand for industrial equipment and machinery.

North Central and Southern Regions Lead Rural Export Value

Exporting is common for nonmetro firms in all regions of the country, but plants in the Northeast and Pacific regions are the most likely to participate in export markets. About 60 percent of nonmetro plants had export sales in these two regions—a higher rate than any other region. Exports were 19 percent of shipments in the nonmetro Pacific and 12 percent in nonmetro New England—also ahead of other nonmetro regions. The nonmetro Mountain region lags others in exports (although the metro Mountain region is one of the leading export regions), but even there, 39 percent of plants have export sales that account for 6 percent of shipments.

In dollar value, the North Central and Southern regions account for the bulk of nonmetro exports because most nonmetro manufacturing is based in these regions. Of the nine census divisions, the East North Central region is the leading source of nonmetro exports (table 3). The East and West North Central regions together account for 40 percent of nonmetro exports. Another 40 percent of nonmetro exports is accounted for by the South Atlantic, and East and West South Central regions. The dollar value of exports in the New England and Pacific regions is modest because these highly urbanized regions have relatively little nonmetro manufacturing industry.

Large Plants Account for Most Exports

Exporters and nonexporters differ in other characteristics besides the type of product they make. Understanding how exporters and nonexporters differ is important. This can help policymakers predict how the benefits of export promotion are distributed, to target export assistance toward those who need it, and to evaluate the usefulness of export promotion strategies. Export promotion programs have been criticized in the past because most benefits went to a few large companies.

An important characteristic of exporting plants is size. Plants with 250 or more employees account for 61 percent of nonmetro exports (fig. 3). Midsized plants with 50-249 employees account for another 31 percent, and plants with 10-49 employees account for only 8 percent of nonmetro exports. (The survey did not cover plants with fewer than 10 employees). Two-thirds of large plants have export sales compared with only 38 percent of small nonmetro establishments. The largest nonmetro establish-

Table 3

Nonmetro manufactured exports by Census division, 1995

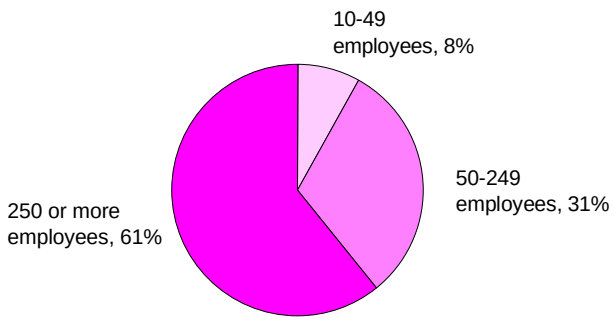
North Central and Southern regions lead in value of nonmetro exports

Region	Export plants[1]	Export ratio[2]	Export value[3]
	Percent		Billion dollars
New England	60	12	2.4
Mid-Atlantic	47	9	2.9
East North Central	49	10	16.2
West North Central	50	10	9.9
South Atlantic	43	11	11.7
East South Central	44	9	7.3
West South Central	46	8	6.9
Mountain	39	6	1.9
Pacific	62	19	4.6

[1]Plants reporting export sales greater than zero.
[2]Exports as a percentage of shipments
[3]Estimated total dollar value of nonmetro industry exports.
Source: Estimated from ERS Rural Manufacturing Survey data.

Figure 3
Share of nonmetro manufactured exports by plant size

Large plants account for most exports



Source: ERS Rural Manufacturing Survey.

ments export about 11 percent of their shipments. The export share falls to 9.4 percent for midsized plants and 7 percent for the smallest nonmetro plants. Establishments that are part of a larger multiunit firm are also more likely to produce for the export market. Nonmetro branch plants export 12.8 percent of their shipments compared with 9 percent for single-unit and headquarters plants.

Exporters Measure Up Well Against Nonexporters

Among nonmetro establishments, those with exports come out ahead of nonexporters in most measures of competitiveness. Nonmetro exporting plants not only tend to be larger, they grow faster and pay higher wages. Plants with exports have an average of 145 employees compared with 78 for nonexporters (table 4). Nonmetro export establishments added an average of 10 jobs between 1992 and 1995, while nonexporters added an average of 8. Sixty-one percent of exporters reported that they planned or initiated a major expansion or modernization of their plant between 1992 and 1995 compared with 53 percent of nonexporters. Exporting increases the potential market for an establishment's products and may present more opportunities for growth.

Nonmetro export plants have higher hourly wages, averaging $9.12 per worker for production workers, while nonexporters paid an average of $8.66. Wage growth was identical for exporters and nonexporters between 1992 and 1995 (14 percent). Competing forces affect wage growth for exporters relative to nonexporters. Overseas demand for exporters' products may allow them to pay their employees more. On the other hand, businesses selling on world markets may be more sensitive to cost increases (including labor costs) that make their products

Table 4
Characteristics of nonmetro plants with and without exports

Exporters compare favorably on most performance measure means

Characteristic	Nonexporter	Exporter
	Number	
Employees	78	145
Growth, 1992-95	8	10
	Dollars	
Production worker hourly wage	8.66	9.12
	Percent	
Growth, 1992-95	14	14
Major expansion/modernization since 1992	53	61
Product line changes in last 3 years:		
Dropped products	37	52
Added new products	71	84
Improved product design	56	68
Improved product quality	72	79
Lower production cost	44	48
Production workers with high school degree	81	84
Professional and technical employees	5	7
Use Internet	17	32
Computer links to other companies	19	36
Use employee problem-solving groups or quality circles	45	54
Use statistical process control	29	44
Use total quality management	40	50
Use outside expertise for marketing	33	52
	Average = 100	
Government programs use index[1]	97	127

[1]Government Programs Use Index is a numerical score based on respondents' rating of the importance of six types of government programs to their business operations. A score above 100 means that the respondent rated the importance of government programs more highly than the average respondent. A score below 100 means that the respondent placed relatively little importance on government programs.

Source: ERS Rural Manufacturing Survey.

less competitive. Consequently, they have greater incentive to keep growth in wages in check.

Product line changes serve as an indicator of how firms respond to changing markets to remain competitive. Exporters were much more likely than nonexporters to add, drop, and improve the design of their products. Exporters were also somewhat more likely to report that they improved product quality or lowered their production costs.

Exporters have a very slight edge in two measures of workforce skills. Eighty-four percent of production workers in export plants have at least a high school degree,

slightly more than the 81 percent at nonexporting establishments. Exporters classified 7 percent of their workers as professional or technical (engineers, scientists, computer specialists, draftsmen, lawyers) compared with 5 percent for nonexporters.

Exporters are also more likely to use new forms of work organization and management practices, including quality circles, total quality management, and statistical process control. These practices have been increasingly popular in U.S. factories as companies have given increased attention to product quality and worker productivity. An index of advanced production technology use shows that nonmetro exporters are also ahead of nonexporters in use of technologies like computer-aided design, programmable controllers, and linked-access networks.

Telecommunications technologies can help businesses stay in touch with overseas customers. As might be expected, given the importance of communications for selling overseas, nonmetro exporters are ahead in use of telecommunications technology. Thirty-two percent of exporters use the Internet and 36 percent have computer links to other companies compared with 17 and 19 percent, respectively, of nonexporters.

Not surprisingly, exporters are also more likely to use outside expertise for marketing. Fifty-two percent of nonmetro exporters used outside marketing expertise compared with 33 percent of nonexporters. The most popular sources of expertise are other branches of the plant's company, followed by local industry groups, State or national industry associations, and public or university programs.

Exporters are more likely to make use of government programs. An index based on rating of the importance of six types of programs, including various loans, tax breaks, industrial parks/enterprise zones, and training/technology programs, shows that nonmetro exporters are 27 percent above the average, while nonexporters are slightly below the average. Marketing assistance and government programs may help businesses increase exports, but the higher use by exporters may simply reflect a generally higher level of savvy and business acumen on the part of plants that export.

Characteristics Associated With Exporting

The comparisons in table 4 indicate that exporting plants measure up well against nonexporters in many categories. However, many of these characteristics are related to one another. In particular, the larger size of exporters may account for many of their advantages shown in table 4. To measure the effects of individual characteristics on exporting, I performed a multivariate analysis of the probability of being an exporter. The results show the effect of each individual characteristic, holding other characteristics constant (table 5). When this is done, there is no difference in the probability of exporting between metro and nonmetro plants. The differing characteristics of metro and nonmetro plants account for the lower nonmetro export rate.

Plant size has a positive effect on exporting. Surprisingly, single-unit plants have a higher probability of exporting when size is held constant. Use of new work organization practices and advanced production technology have no association with exporting when other characteristics are held constant. Use of telecommunications technology, however, is positively associated with exporting. Education of production workers has no effect, but plants with a higher percentage of professional and technical workers are more likely to export. Marketing assistance is strongly associated with exporting. Only two types of product

Table 5

Plant characteristics associated with exports

Metro location has no effect on the likelihood of exporting when plant characteristics are held constant

Characteristic	Effect
Metro location	None[1]
Plant size (employment)	Positive[2]
Single unit firm	Positive
Use of work organization practices	None
Use of advanced technology	None
Use of telecommunications	Positive
Education of production workers (at least 90 percent HS graduates)	None
Professional and technical workers (percent)	Positive
Used outside marketing assistance	Positive
Product line changes in last 3 years:	
Dropped products	Positive
Added new products	Positive
Improved product design	None
Improved product quality	None
Lowered cost of production	None
Region (relative to West):	
North	None
South	Negative[3]
Midwest	None
	Number
Observations	3,158

Note: Estimates obtained using logit analysis,with dependent variable equal to 1 if the plant had exports in 1995, equal to 0 otherwise. Two-digit industry dummy variables were also included in the model.

1Not statistically different from zero.

2Positive effect, significant at 0.10 level.

3Negative effect, significant at 0.10 level.

Source: ERS analysis of Rural Manufacturing Survey data.

changes have an effect on exporting. Plants that added and dropped products were more likely to export. However, changes in design, quality, or production costs have no association with the probability of exporting. Of the four U.S. regions, plants in the South are less likely to export than those in the West and Northeast.

Size More Important Barrier Than Rural Location

Size appears to be a more important barrier to exporting than does rural location. Small plants are much less likely to export than larger plants. This probably reflects lack of information and other resources needed by small firms to enter the export market. But it could also be due to the tendency for better managed firms (who are also more likely to export) to grow faster than poorly managed firms. This may also explain why larger (successful) firms and plants are more likely to have exports than smaller (less successful) plants at a particular point in time. Public officials should be aware that much of the benefit of export promotion programs goes to large businesses, which has been a point of criticism in the past. Assistance in identifying and developing overseas market opportunities should be targeted to smaller businesses.

While exporters are among the more successful firms, government officials and business leaders should be careful in identifying exporting plants as necessarily "good" plants. Businesses that export provide higher paying jobs, grow faster, are more likely to consult outside experts for marketing assistance, and place a higher importance on government programs. Research by Bernard and Jensen (1995) found cross-sectional results similar to this study, but when they followed plants over time they found that exporting was not a good predictor of success. Exporting businesses apparently are among the more astute and successful. However, the United States has the advantage of a huge domestic market with growing demand for many products, and it is possible for many types of businesses to succeed without selling overseas. An export strategy may not be the best approach for all firms or communities.

For Further Reading...

A. B. Bernard and J. Bradford Jensen, "Exporters, Jobs, and Wages in U.S. Manufacturing: 1976-87," *Brookings Papers on Economic Activity: Microeconomics*, 1995, pp. 67-119.

Bureau of the Census, *U.S. Commodity Exports and Imports as Related to Output: 1993 and 1992*, OEI/93, September 1995.

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Terry L. Besser

Employment in Small Towns

Microbusinesses, Part-Time Work, and Lack of Benefits Characterize Iowa Firms

As a whole, smalltown Iowa businesses employ more part-time than full-time employees and are less likely to provide benefits than are small businesses in general. Benefits are significantly lower for part-time employees. However, type and size of business vary greatly. Roughly half of the employment opportunities represented by smalltown Iowa businesses are in firms with fewer than 20 employees.

One of the most perplexing problems facing many rural communities is the presence of a labor shortage coupled with low wage levels. This study is based on a survey of smalltown businesses in one State, which exemplifies both conditions. In Iowa, the jobless rate for 1997 was 3 percent and the 1994-97 average was just 3.5 percent (Iowa Department of Economic Development, 1998). One out of four nonmetropolitan (nonmetro) counties in the State had 2 percent or fewer unemployed, and 68 percent of them fell in the 2.1 percent to 3.4 percent unemployed category for September 1997. This compares with the national unemployment rate of 4.9 percent for the same period (Iowa Department of Economic Development, 1997, 1998).

During this time of low unemployment in Iowa, wages have also remained relatively low. In 1995, the average annual earnings (in 1995 dollars) for Iowa nonfarm workers was $23,950 compared with the U.S. average of $29,268. Workers in Iowa nonmetro areas fared even worse. In manufacturing, for example, the average nonmetro worker made $32,823 in 1995; a metro worker averaged $41,403 (Bureau of Economic Analysis, 1969-96). Low-quality employment opportunities make it difficult for communities to attract and retain residents, especially the well-educated young population. Developers do not find it profitable to build houses in an affordable price range for workers, contributing to the housing shortage in many rural communities. Without an adequate supply of affordable housing, attracting new residents or businesses is difficult. Low wages depress the tax revenue of communities, affecting local public services, such as education, libraries, and infrastructure. Further, local businesses are limited in their ability to expand their operations and to replace workers who leave.

Relatively low levels of compensation in Iowa, particularly in rural areas, may partially explain the shortage of workers, even while puzzling us about why wages have not risen. However, other conditions of employment in nonmetro areas might also play a significant role in compensating for low wages or exacerbating the situation. The purpose of this article is to examine those other dimensions of employment in smalltown businesses.

Type of Business Affects Benefit Coverage and Turnover Rates

Table 1 shows selected employment dimensions of businesses by their Standard Industrial Classifications (SIC).

Terry L. Besser is an assistant professor of sociology at Iowa State University. This research was supported with funds provided through the Rural Development Initiative Program, Iowa State University Agricultural and Home Economics Experiment Stations, Ames, IA.

Table 1

Characteristics of employment by business SIC

Conditions of employment vary by business type

Selected characteristics	Business SIC's[1]								
	Agriculture	Construc-tion	Manfact-uring	Trans-portation	Whole-sale	Retail	Finance/ insurance/ real estate	Service	Total
All employees (percent)	1.8	7.5	6.8	5.3	11.7	36.3	6.2	24.2	100.0
Average employees per firm (number)	5.8	9.3	23.2	12.9	4.2	10.2	4.9	10.4	10.2
Full-time employees per firm (average percent)	44.6	55.9	69.2	71.4	69.1	33.9	61.9	41.3	47.1
Women employees per firm (average percent)	46.0	18.4	49.6	38.2	31.0	67.5	81.0	62.5	58.5
Average age of business (years)	24.5	28.0	50.8	35.9	29.3	24.9	32.6	26.1	28.0
Average change in number of employees per 5 years (percent)	35.0	56.0	39.7	29.0	38.0	22.0	23.0	31.0	29.7
Average evaluation of success (1=very unsuccessful, 5=very successful)	4.1	4.1	3.9	4.0	4.0	4.0	4.2	4.2	4.1
Average turnover (percent)	16.4	35.0	7.9	10.1	14.6	27.6	7.3	16.9	20.2
Average labor concern[2]	6.7	8.3	8.3	8.1	8.2	8.1	6.9	7.6	7.8

SIC = Standard Industrial Classification

[1]Mining was dropped as an SIC category due to its low number in the sample and to simplify the table.

[2]Additively constructed from three labor concern questions, each coded 1-5. Additive variable recoded: 1 = lesser concern, 13 = greater concern.

Source: Department of Sociology, Iowa State University, "Doing Business in Iowa Small Towns."

The SIC system is used to categorize establishments by the type of activity in which they are engaged: agriculture, mining, construction, manufacturing, transportation, wholesale, retail, finance/insurance/real estate, or service. The table shows that agricultural and finance firms have fewer employees on average than other firms. Manufacturing and wholesale businesses average the largest number of employees per firm (23.2 and 14.2, respectively). Nonetheless, the greater number of retail and service establishments (36.2 and 23.7 percent), compared with other businesses, make them the major employers in rural communities. About 7 percent of all workers employed by businesses sampled worked in manufacturing firms compared with 36.3 percent in retail and 24.2 percent in service establishments. For the State as a whole in 1995, 30 percent of employees of private, for-profit, nonagricultural organizations worked for service and retail businesses combined. Twenty-four percent of employees were employed in manufacturing businesses (Bureau of Labor Statistics, 1997).

The dominance of the retail and service sectors among smalltown employers contributes to the low percentage of full-time employment opportunities offered by smalltown businesses. Overall, only 47.1 percent of the employees in the sample businesses are full-time permanent employees. Retail, service, and agriculture are the only categories of businesses that fell below 50 percent of employees who are classified as permanent full-time. The average percentage of women employees is highest in retail, finance, and service businesses. Construction, transportation, and wholesale businesses have the lowest average percentage of women in their workforce.

Job security was gauged by average age of business, average percentage gain in number of employees, and average level of success as evaluated by the business operator. The reasoning is that categories of firms that have been more successful, have added employees, and are older should be more secure places to work. Using this measure, job security does not significantly vary by business SIC category. The difference between the perceived success and the percentage gain in employees over the last 5 years is not statistically significant, based on the business SIC category. Categories do vary by age, with manufacturing firms significantly older than other firms. Because two out

Background Information About Iowa Smalltown Employers

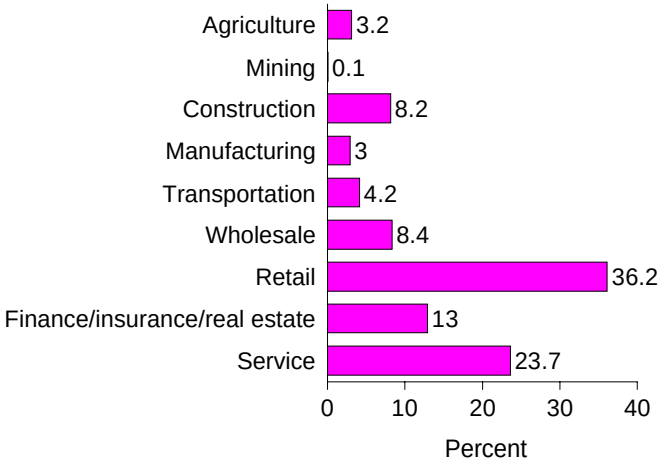
Most employers (59.9 percent) are retail and service establishments (fig. 1). However, only a small percentage of firms (11.8 percent) are owned by or are a franchise of another company outside of the community. Adding in the locally owned franchises, approximately 96 percent of smalltown business employers are locally owned (fig. 2). About 74 percent of owners are men, and 58 percent are sole owners. Among respondents, 75 percent are owners and the remainder managers. In addition, 8 percent of the businesses are less than 5 years old, 59 percent plan to expand in the next 5 years, almost 80 percent of operators judge their businesses to be successful or very successful by their own standards of success, and 46.4 percent of businesses with employees in 1990 have increased their number of employees. These findings point to a more positive view of businesses in rural communities than is generally believed.

Percentage change in employment was calculated by subtracting the number of employees at a business in 1990 from the number employed in 1995 and dividing by the 1990 number. Those without employees in 1990 were coded as missing to prevent greatly skewing the statistic.

Figure 1

Types of businesses in Iowa smalltown business sample

Retail and service firms make up over half of businesses in sample

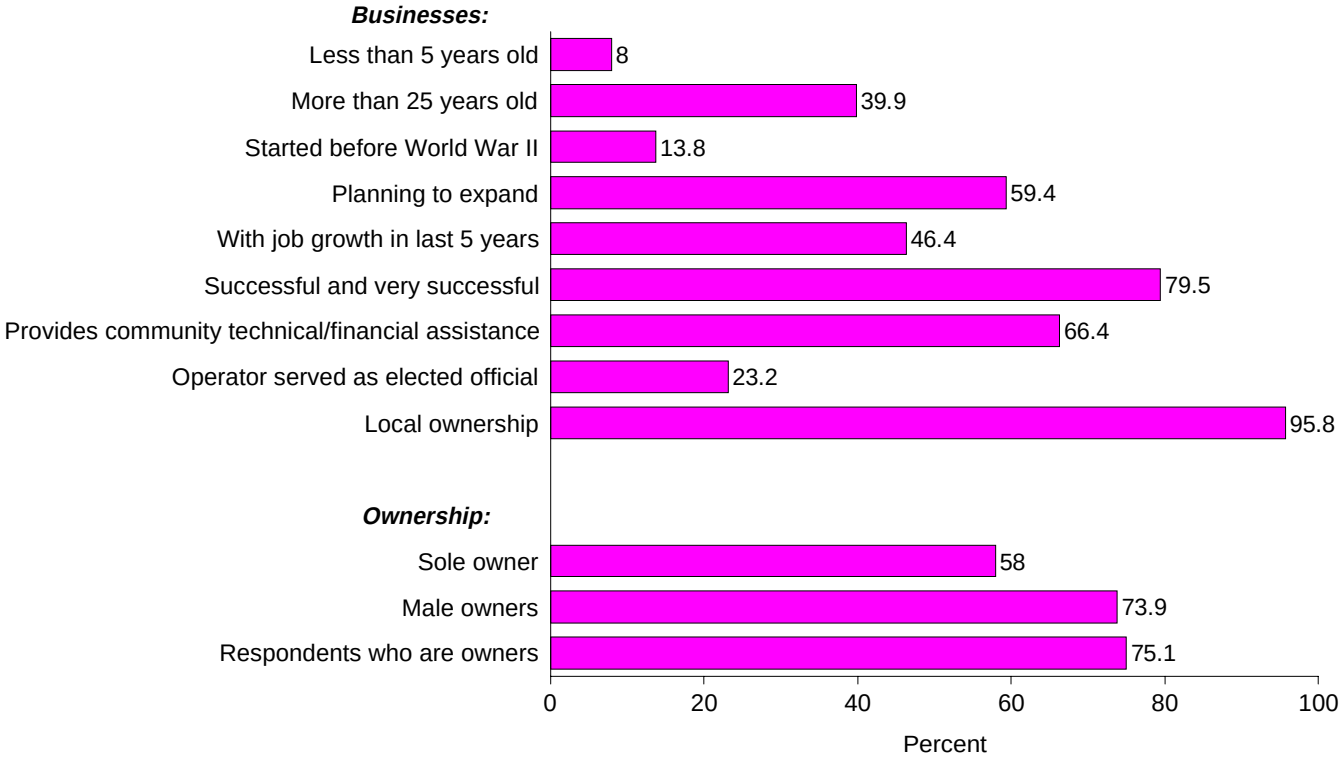


Source: Department of Sociology, Iowa State University, "Doing Business in Iowa Small Towns."

Figure 2

Characteristics of the Iowa smalltown business sample

Many small businesses see themselves as successful, plan to expand



Source: Department of Sociology, Iowa State University, "Doing Business in Iowa Small Towns."

How Data for This Study Was Collected

The sample of businesses for this study was randomly drawn from a list of all businesses (defined as for-profit organizations with a business listing in the local and regional telephone directories) operating in 30 communities which, in turn, were randomly selected from 99 rural Iowa communities from a previous study. A rural community is defined here as an incorporated municipality with a population between 500 and 10,000 that is not contiguous to a metro area. The sample of businesses was stratified to oversample the businesses in the smaller towns. The data were weighted to allow for generalization to all Iowa towns with 500 to 10,000 populations. In the summer of 1995, telephone interviews averaging 36 minutes were conducted with 1,008 business owners and managers. Eighty-nine percent of the business operators contacted agreed to participate. Of the 1,008 businesses in the sample, 18.6 percent had no employees. Therefore, the sample size under consideration here is 820, or only those businesses with employees.

Using these data, smalltown employers can be analyzed from three different perspectives. First, differences in the situation of employees are considered according to the Standard Industrial classification (SIC) of employers in order to answer the question: "Do dimensions of employment vary by type of business?" Second, business size, as measured by number of employees in a business, is used to determine whether larger businesses offer a significantly different employment climate than smaller businesses. This also provides a way to gauge the relative contribution of businesses by size to the total employment opportunities available in small Iowa towns. In the third perspective, employers are grouped and compared by their turnover rates, a frequently used indicator of employee job satisfaction. One would expect that dimensions of employment will vary significantly as turnover rates increase.

of three measures of job security show no significant differences, it would be hazardous to draw any conclusions about differential job security based on SIC category.

Two indicators that can help measure employee job satisfaction are average percentage turnover and management's assessment of the shortage of labor (labor concern). The turnover rate was calculated by asking respondents the number of employees who voluntarily left their jobs in the last year and dividing that amount by the total number of employees. Labor concern is an additive scale constructed by summing answers to three questions each of which asked "how much of a threat to your business is _____?" on a scale of 1 (for no threat) to 5 (for severe threat). The threats were "labor costs," "availability of labor," and "quality of labor force." The logic for using these two variables to measure job satisfaction is that higher levels of employee dissatisfaction will lead to greater employee turnover, especially in the labor shortage situation prevalent in Iowa rural communities today. Likewise, higher levels of employee dissatisfaction should increase employer concern about labor quality, availability, and cost.

On both dimensions, the difference between types of firms is statistically significant. Average turnover rates are highest in construction and retail firms. Construction firms provide seasonal work by their nature, at least partially explaining the higher turnover in that category. Management's greatest labor concerns are in construction and manufacturing firms. In the case of manufacturing, labor concern may result from difficulty in securing employees for expansion plans rather than the dissatisfaction of current employees. Given the incongruence of the second lowest turnover rate for manufacturers coupled with high perceived labor concern, this seems logical. On the other hand, retail firms have high average turnover and relatively high average labor concern. This points to the possibility that employee dissatisfaction may be highest among retail firms.

Looking at benefits offered to workers by their smalltown employers, we see a great deal of variation by type of business (table 2). Retail and service establishments fall below the average for the group in almost every benefit category. Again, the large number of these two business types contributes to the fact that the overall sample of firms offers less coverage for their employees than that offered by small businesses across the country (national figures are from the Bureau of Labor Statistics, 1994). While 58 percent of Iowa smalltown businesses offer health benefits, the national figure for small businesses is 66 percent. As for retirement benefits, the comparison is 34.1 percent for Iowa small towns, 42 percent nationally; for paid vacations, it is 53.4 percent for Iowa small towns and 88 percent nationally.

Part-time workers in the Iowa sample (not shown) are less likely than full-time employees to receive benefits: 9.4 percent have health benefits; 9.2 percent, retirement; 20.3 percent, paid vacations; and 12.4 percent, sick leave. The low health and retirement benefits coverage provided by many categories of rural businesses, as well as the lower coverage for part-time employees, raises concern. Also noteworthy is the relatively low percentage of manufacturing employers who provide paid sick leave for employees compared with all other employers, including construction and retail employers. Only 31.8 percent of manufacturers indicated they offered sick leave compared with an average for all firms of 53.4 percent.

Smaller Businesses Are Less Likely to Offer Full-Time Work and Benefits

Studies have consistently shown that large firms offer the best advancement potential, training opportunities, benefits packages, security, and wages (Kalleberg and Van

Buren, 1996; Brown, Hamilton, and Medoff, 1990). All but six of the employers in this study are small firms, and those 6 have between 101 and 200 employees. Even though the businesses are small by standard definitions, one could argue that the employment situation of working in a business with 2 other employees is quite different from working with 90 other employees. To more fully understand the impact of size on employment among small nonmetro firms, the sample was broken down into five size categories. Most rural community employers are not just small; they are very small microenterprises (table 3). Slightly more than half of the businesses report

Table 2

Benefits offered by type of business

Retail, service, and construction firms offer fewer benefits to employees

	Business SIC's[1]								
Selected characteristics	Agriculture	Construc-tion	Manfact-uring	Trans-portation	Whole-sale	Retail	Finance/ insurance/ real estate	Service	Total
					Percent				
Health benefits for full-time	75.0	58.2	72.7	66.6	84.4	47.9	63.8	51.8	58.3
Average share of health benefits paid by employer	82.9	62.4	74.5	75.1	83.9	72.4	83.9	68.1	75.2
Retirement for full-time	30.0	23.6	40.9	51.5	57.8	27.0	44.6	27.4	34.1
Paid vacation for full-time	85.0	65.4	77.3	78.8	90.6	64.4	77.1	72.6	72.9
Paid sick leave for full-time	70.0	38.2	31.8	66.7	67.2	43.2	69.9	56.3	53.4

SIC = Standard Industrial Classification.

[1]Mining was dropped as an SIC category due to its low number in the sample and to simplify the table.

Source: Department of Sociology, Iowa State University, "Doing Business in Iowa Small Towns."

Table 3

Employer size and conditions of employment

Sizable percentages of employees work for very small businesses

	Firms with					
Selected characteristics	1-4 employees	5-9 employees	10-20 employees	21-50 employees	51 or more employees	Total
Firms (number)	425	186	133	49	27	820
(percent)	51.8	22.6	16.2	6	3.3	100
Total employees (percent)	12.0	14.7	22.2	18.4	32.7	100
Full-time employees per firm (average percent)	43.4	48.0	52.1	56.7	57.8	47.1
Women employees per firm (average percent)	62.7	53.6	54.2	50.7	60.3	58.5
Average age of business (years)	24.4	32.3	31.3	34.8	26.4	28.0
Average change in number of employees per 5 years (percent)	16.0	45.0	41.0	57.0	20.0	30.0
Average evaluation of success (1 = very unsuccessful, 5 = very successful)	4.0	4.1	4.2	4.2	4.3	4.1
Average turnover (percent)	18.3	19.6	21.5	32.1	28.0	20.2
Average labor concern[1] (percent)	7.1	8.5	8.5	8.8	9.8	7.8

[1]Additively constructed from three labor concern questions, each coded 1-5. Additive variable recoded: 1 = lesser concern, 13 = greater concern.

Source: Department of Sociology, Iowa State University, "Doing Business in Iowa Small Towns."

employing four or fewer workers (full-time, part-time, and temporary). Additionally, 67.3 percent of employees represented by this random sample of smalltown businesses work in businesses with less than 51 employees. This sizable group of workers and employers is sometimes overlooked in rural employer studies. At the same time, the largest employers (that group with 51 or more employees) constitute only 3.3 percent of all establishments, but account for a disproportionately large share of employees—32.7 percent.

Business size is significantly related to several of the employment dimensions explored in this analysis. The percentage of full-time employees, management's perceived labor concern, and the likelihood of offering health, retirement, and vacation benefits to full-time employees all increase significantly with size of firm (table 4). The other significant differences shown in tables 3 and 4 defy obvious explanation. What is clear is that the opportunities for employment offered by smalltown businesses are about as likely to be in firms with 20 or fewer employees as in larger organizations. Furthermore, the smallest firms are less likely to offer opportunities for full-time employment or employer-supported benefits. Another noteworthy finding is the lack of statistically significant differences in perceived success and in turnover rates by size of business. In spite of the lower benefits and reduced full-time work opportunities, small firms do not seem to suffer greater turnover. Apparently, employees are considering other aspects of employment—for example, interest in the work, sociability with the owner and other employees, length of commute to work, and flexibility of work schedule—in their decisions to remain with an employer.

No Turnover Does Not Necessarily Equate to the Best Working Conditions

Voluntary turnover rate is the traditional measure of employee job satisfaction. The validity of this measure varies, however, by the specifics of the economy and culture at the time and place under consideration. This is illustrated by considering the low voluntary turnover rates that characterize businesses during times of economic recession and businesses located in geographic areas experiencing regional recession or limited employment opportunities. During the data collection period of this study, unemployment levels in rural communities in Iowa were at record lows. Under such circumstances, workers have greater opportunities to change employers if they are dissatisfied with their current situation. Therefore, turnover rates should be a fairly valid measure of employee satisfaction for this study.

Employment dimensions from the perspective of turnover rate are examined in table 5. In spite of the way turnover rate is displayed in the table, one should not infer that turnover rate causes differences in benefits. In fact, a strong argument could be made that the opposite is more likely the case. These findings can demonstrate significant association between factors, but not the order of causation. Over half of the businesses fall into the 0-percent turnover category. Employers with the highest turnover (100 percent or more) apparently differ significantly from the other employers (table 5). The youngest businesses have the highest turnover and the lowest percentage of full-time employees. They are significantly less likely to provide retirement, vacation, and sick leave benefits, have decreased in size in the last 5 years, and are more likely to be concerned about labor matters.

Table 4

Benefits offered by size of business

Larger employers are more likely to offer benefits to employees

Selected benefits	Firms with					
	1-4 employees	5-9 employees	10-20 employees	21-50 employees	51 or more employees	Average
	Percent					
Health benefits for full-time	43.2	59.9	71.1	81.2	96.3	58.2
Average health benefits paid by employer	75.8	75.3	74.4	77.0	70.7	75.2
Retirement for full-time	23.3	27.8	49.6	56.2	74.1	34.3
Paid vacation for full-time	62.4	77.2	78.5	85.4	100.0	72.8
Paid sick leave for full-time	47.4	56.8	56.7	45.8	74.1	53.0

Source: Department of Sociology, Iowa State University, "Doing Business in Iowa Small Towns."

Table 5

Turnover rate by selected business characteristics

Lowest turnover does not equate to the best working conditions

	Turnover rate									
	0 percent		1-27 percent		28-99 percent		100 percent+		Total	
Selected characteristics	Mean 0	S.D. 0	Mean 15.9	S.D. 6.4	Mean 47.8	S.D. 15.4	Mean 127.6	S.D. 53.0	Mean 20.2	S.D. 14.5
Businesses (number)	416		183		159		44		802	
(percent)	51.9		22.8		19.3		5.4		100.0	
All employees (percent)	25.0		46.4		24.5		4.0		100.0	
Average employees per firm (number)	4.5		18.8		11.4		6.8		10.2	
Full-time employees per firm (average percent)	46.9		56.6		41.6		29.1		47.1	
Women per firm (average percent)	59.2		52.7		62.1		56.5		58.2	
Average age of business (years)	29.7		32.8		21.5		18.8		28.2	
Average change in number of employees per 5 years (percent)	24.0		53.0		28.0		-18.0		30.0	
Average evaluation of success (1 = very unsuccessful, 5 = very successful)	4.1		4.1		4.1		3.8		4.1	
Average labor concern[1]	7.2		8.4		8.3		8.8		7.8	
Health benefits for full-time (percent)	51.0		70.2		56.4		45.4		57.3	
Average health benefits paid by employer (percent)	79.2		73.8		70.7		70.9		75.2	
Retirement for full-time (percent)	27.4		47.9		30.6		9.0		33.2	
Paid vacation for full-time (percent)	65.3		84.2		77.4		50.0		72.6	
Paid sick leave for full-time (percent)	51.0		60.2		51.6		18.0		52.6	

Note: Total may not add due to rounding. S.D. = Standard deviation.

[1]Additively constructed from three labor concern questions, each coded 1-5. Additive variable recoded: 1 = lesser concern, 13 = greater concern.

Source: Department of Sociology, Iowa State University, "Doing Business in Iowa Small Towns."

The significant employment dimensions displayed in table 5 are not necessarily directly related to turnover rates. That is, employers with 0-percent turnover may not offer the best employment conditions even if the 100-percent turnover employers offer the worst. Employers with 0-percent turnover do not provide the highest likelihood of benefit coverage. The second category, 1- to 27- percent turnover, has that distinction. Employers with 0-percent turnover do not have the highest percentage of full-time employees; the 1- to 27-percent category does. The average age of businesses in the 0- percent turnover category (29.7 years) is second oldest to the 1- to 27-percent category, with an average of 32.8 years in business. Another aspect that differentiates the 1- to 27-percent turnover group from the other employers is their significantly larger size and their ranking as highest in average percentage gain in employment in the last 5 years.

The 1- to 27-percent turnover category of employers apparently provides the best working conditions of the employers in this sample. This group of businesses is older and larger than the other categories of businesses, employs about half the workers, and has experienced an average increase in employment of 53 percent over the last 5 years. The large number of retail and service businesses in the sample leads to their dominance in all of the turnover categories, providing little information about the relationship of turnover rates and types of businesses.

Another way to analyze this relationship is to calculate the percentage of each SIC category that falls in each turnover rate category (table 6). From this view, we see that most finance/real estate/insurance, agriculture, service, manufacturing, and transportation firms are in the 0-percent turnover category. As compared with other cate-

Table 6
Business SIC's by turnover rate
Business type affects turnover rate

Business SIC's	Turnover rate				
	0 percent	1-27 percent	28-99 percent	100 percent+	Total
			Percent		
Agriculture	60.0	20.0	16.0	4.0	100.0
Construction	47.8	14.9	23.9	13.4	100.0
Manufacturing	58.3	33.3	8.3	0.0	100.0
Transportation	54.3	37.1	8.6	0.0	100.0
Wholesale	44.1	38.2	14.7	2.9	100.0
Retail	38.5	25.2	29.7	6.6	100.0
Finance/real estate/insurance	77.4	14.2	5.7	2.8	100.0
Service	59.2	17.8	17.3	5.8	100.0

SIC = Standard Industrial Classification.
Source: Department of Sociology, Iowa State University, "Doing Business in Iowa Small Towns."

gories of businesses, a higher proportion of wholesale, transportation, and manufacturing businesses are in the 1- to 27-percent category. Construction, retail, and service firms have a higher probability than other firms of falling into the 100-percent plus turnover category. Put another way, for any given randomly selected finance / real estate / insurance business chosen from the sample, the chances are 77 out of 100 that it will be in the 0-percent group. For a randomly selected construction firm, the odds that it is in the 100-percent-plus turnover category are 13 out of 100, or higher than a firm in any other kind of business.

Smalltown Employment Opportunities Dominated by Part-time Jobs Without Benefits

This analysis draws on information gathered in only one State, but it suggests some useful insights into the condition of employment offered by businesses in rural communities of like circumstances throughout the Midwest and other parts of the country. It clearly demonstrates the dominance of retail and service businesses as smalltown employers. The vast majority of establishments are locally owned, despite the growth of franchising nationally. Moreover, most businesses show ample signs of vitality: 59 percent plan to expand, the average firm has had an increase of 30 percent in employment in the last 5 years, and almost 80 percent judge their business to be successful or very successful. Equally striking is the large percentage of employment opportunities represented by the smallest of the small businesses—that is, approximately 27 percent of employees are employed at businesses with fewer than 10 employees, and 67 percent work for employers with 50 or fewer employees.

Although there are differences depending on the various perspectives presented in this article, overall part-time employees outnumber full-time. Fifty-three percent of employees working for an average business in this sample are part-time. We do not know whether these employees prefer part-time work or would rather work full-time. Missing in this research are the voices of the workers themselves. They could tell us not only about their preferences in work status, but also about their evaluation of less tangible aspects of work like autonomy, sociability, and flexibility of schedule. Regardless of the desirability of part-time employment, there is reason for concern about the low benefit offerings available to this very sizable group of workers and the large proportion of full-time employees who do not receive health, sick leave, or retirement benefits.

Rural Employment May Be Enhanced by Directing More Resources Toward the Smallest Employers

The significant number of employment opportunities available in firms of 50 or fewer employees suggests the potential advantage of focusing attention on the smallest employers. Community economic development groups, State departments of economic development, and university extension services should direct extra effort at encouraging the involvement of the owners and managers of the smallest businesses in development strategies, and programming, training, and consulting offerings. There is a certain cost-effective rationale to efforts that pay more attention to businesses with the largest number of employees. The evidence presented here argues for a more balanced strategy, however.

Providing attention to the smallest employers must be coupled with recognition of the limited resources possessed by this group. Since most of the smallest employers are retail and service firms, the tactics to improve labor productivity and satisfaction developed for other kinds of businesses, like manufacturing, may not be applicable. Thus, new ideas and creative strategies are called for in order to improve the work conditions in smalltown businesses.

Ways to improve the employment situation at these firms might include collaboration among the businesses or public/private partnerships to provide more lucrative employee benefits (especially health and retirement benefits), employee training, information and technology sharing to improve worker productivity, and the pooled provision for child care and transportation. Gary Green suggests the development of career ladders between firms as a technique to provide advancement and training opportunities for employees of smalltown businesses. Another possibility is to discover what the high-growth, low-turnover firms identified in table 5 (the 1- to 27-percent turnover category) do that makes them able to offer a better employment situation than other firms of the same industrial classification. Lessons gleaned from this group could provide the basis for strategies to be used by other smalltown businesses.

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Jason P. Schachter, Leif Jensen, and Gretchen T. Cornwell

Migration, Residential Mobility, and Poverty in Rural Pennsylvania

Because of its profound implications for growth and decline in rural America, migration has long been a topic of interest. Migration is critical for explaining processes of urbanization, as workers venture into nonmetro counties to live while commuting to jobs in the central cities and expanding suburbs of metro America. Rural sociologists have recently found a pattern of urban to rural migration among the poor. Pushed by expensive and poor-quality housing in the city and attracted by ample and low-cost housing and a higher quality of life in the countryside, the poor often "leapfrog over the city's suburban ring to settle in one or a group of economically distressed and depopulated towns in a rural periphery" (Fitchen, 1995, p. 193). This article uses the 1990 Census and a special 1991 survey of low-income families living in nonmetro areas of Pennsylvania to explore the reasons the poor move.

Pennsylvania provides a worthwhile laboratory in which to examine the links between poverty and migration in rural areas. While the Commonwealth contains a large metro population (metro counties hold about 86 percent of all Pennsylvanians), it also is highly rural in character. Half the counties are nonmetro, and about 31 percent of all Pennsylvanians live in rural areas, when the census-defined rural parts of metro counties are counted. This gives Pennsylvania the largest rural population of any State, in absolute terms. Within reach of both large and small metro areas, nonmetro Pennsylvania offers a good place to explore questions concerning the flow of the urban poor into rural areas.

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Rural Counties Gain Urban Poor, Lose Better Educated

Nonmetro Pennsylvania counties have been attracting poor from urban areas and the less educated, while losing those with college educations. This becomes particularly clear when the poverty status of counties is taken into consideration. We developed three indices of unequal migration interchange to help understand how poverty and education relate to rural migration (see "Data and Methods"). The Poverty Interchange Index, a measure of the percentage of poor inmigrants compared with the percentage of poor outmigrants, is

Data and Methods

To address questions about the movement of the poor from metro to nonmetro counties, we analyzed the Special County to County Migration File (STP28), which draws on data from the long form of the 1990 U.S. Census of Population and Housing. Based on a long-form question asking where each household individual aged 5 and older was living in 1985, this file contains counts for each possible intercounty move, as well as counts—for each U.S. county—of nonmovers, intracounty movers, and immigrants from abroad. In addition, these data are broken down by age, gender, race, education, and poverty status. As such, this file is the only data source available to provide recent and reliable estimates of intercounty migration flows. An effort has been made to eliminate college students from the analysis because they are often wrongly counted as poor (see note to table 2).

Migration interchange is expressed as the ratio of the size of inmigrant to outmigrant streams. Streams of three different subpopulations are used to calculate three distinct indexes of unequal interchange. The first, the Poverty Interchange Index (PER), is calculated as the percentage of inmigrants who are poor divided by the percentage of all outmigrants who are poor. The second, the Least Educated Poor Index (LEP), is calculated as the percentage of poor inmigrants with a high school education or less divided by the percentage of poor outmigrants with a high school education or less, and is our best estimate of noncollege student migration interchange. The third, the Brain Drain Index (BDI), is calculated as the percentage of outmigrants with some college education or more divided by the percentage of inmigrants with some college education or more. This is calculated a bit differently from the other two measures, in that values greater than one will denote counties that are at a disadvantage in the interchange of educated migrants. On all three indexes unity denotes equal interchange. Values greater than unity denote interchange that puts the county at a disadvantage (gaining poor, gaining least educated poor, losing college educated). Values less than unity represent advantageous interchange (losing poor, losing least educated poor, gaining college educated).

To answer questions about the motivations and frequency of migration, we analyzed data from the 1991 Rural Livelihood Strategies Survey (RLSS), a survey of 505 women in disproportionately low-income families in nonmetro Pennsylvania. The RLSS was designed to document economic coping strategies among the rural poor by describing and explaining patterns of reliance on market work, the informal economy, and social welfare programs. The survey asked about a wide variety of sociodemographic characteristics, which are available as controls, and contained a module asking about migration behavior and motivations.

To maximize the number of low-income households available for analysis, the sample was drawn using both random and nonrandom sampling techniques. First, a multistaged cluster sampling design was employed, which ultimately allowed for oversampling of minor civil divisions with high poverty rates. Within each, systematic random sampling was used to sample names from per capita tax lists, which can be used as up-to-date, publicly accessible, and comprehensive sampling frames for adult residents of a county. Nonrandom techniques used to boost the sample size of low-income households included snowball sampling and key informant referrals. Women interviewers sought interviews with women in sampled households who were either female heads or wives of male heads. Work published elsewhere compares the characteristics of the RLSS sample and the corresponding population from the 1990 U.S. Census and confirms a high level of comparability (Jensen, Cornwell, and Findeis, 1995). The use of only women for this sample suggests that some caution be used in interpreting these findings. Those women who were married might offer different reasons for moves than their husbands. Moreover, the survey did not cover households headed by unmarried men.

Of the sample of 505, there were 461 respondents (91.3 percent) who reported having moved at least once. Of these, 327 (70.9 percent) indicated their most recent move was within the same county (different house or township), while 134 (29.1 percent) had moved beyond county borders. With poverty thresholds set at 125 percent of official standards, 320 households were defined as nonpoor while 184 were defined as poor. The poverty rate of 36.4 percent well exceeds that for the general population because the poor were oversampled in this survey. When poverty status was cross tabulated with where the respondent first lived, the poor were slightly more likely to have moved within the county. In total, 34.8 percent of the poor had moved from a different county, while 43.4 percent of the nonpoor had moved from a different county. However, the chi-square was only marginally significant at 0.08. Table 3 also summarizes responses for the second and third most recent moves. Results from this part of the survey are presumably less accurate because respondents were being asked to recall events further back in time.

strongly related to a county's poverty status (table 1). That is, counties that already have large proportions of poor are the most likely to receive additional poor migrants. Similarly, the Least Educated Poor Index, the percentage of noncollege-educated poor inmigrants compared with the percentage of noncollege-educated poor outmigrants, shows that counties with higher poverty levels are attracting the less-educated poor. By contrast, the Brain Drain Index, the percentage of college-educated outmigrants compared with the percentage of college-educated inmigrants, reveals that the well-educated are leaving poorer counties faster than they are being replaced by well-educated newcomers. Moreover, areas with higher unemployment are more likely to gain a disproportionate percentage of least educated poor in their migration streams. Even without singling out the poorer counties, nonmetro Pennsylvania is at a disadvantage with metro areas in the educational quality of its migrants. Both the Least Educated Poor Index and the Brain Drain Index are high when

comparing metro with nonmetro counties, which suggests that, overall, nonmetro Pennsylvania has been losing its best educated to metro areas while gaining less-educated poor from them (table 2).

Housing, Quality of Life More Important Than Employment in Motivating Migrants

Why the poor migrate the way they do is a question that the Rural Livelihood Strategies Survey can help to answer. Do the poor generally move to find better employment so they may escape poverty, or do they move more often for cheaper housing and other reasons that merely alleviate poverty? That employment is not usually the main reason has already been suggested by the findings in table 1. A county's level of unemployment, for example, does not seem to be an important factor in the migration of the poor, except that counties with higher unemployment seem to attract the less-educated poor. Moreover, counties with high levels of manufacturing—an important source of employment in nonmetro Pennsylvania—tend to lose poor people to other counties, implying that not many poor are moving to manufacturing counties to seek jobs. The Rural Livelihood Strategies Survey confirms this and demonstrates the importance of housing, family, and quality-of-life issues in explaining migration among the nonmetro poor in Pennsylvania.

The survey asked respondents to choose from 11 possible reasons for their most recent move (table 3). Over half (54 percent) of those who moved felt that "to live in your own home" was a very or somewhat important reason. This was followed by "to save or live more cheaply" (34

Table 1

Migration indexes for nonmetro Pennsylvania counties

High-poverty counties are attracting additional poor migrants, especially the least educated

County characteristics	Poverty Interchange Index (PER)	Least Educated Poor Index (LEP)	Brain Drain Index (BDI)
		Percent	
Poverty rate	0.636*	0.571*	0.365*
Unemployment rate	.307	.477*	.316
Farming employment	-.099	-.196	-.027
Manufacturing employment	-.379*	-.143	.165

*Statistically significant at $p < 0.05$.

Note: numbers are correlation coefficients of the matrix of county characteristics and migration indices.

Source: County to County Migration File (STP28) from the 1990 U.S. Census of Population and Housing.

Table 2

Migration flow totals for nonmetro Pennsylvania counties, 1985-90

Most poor nonmetro migrants move between metro and nonmetro counties

Item	Inmigrants	Outmigrants	Poor inmigrants	Poor outmigrants	PER*	LEP*	BDI*
	Number				Index		
Total nonmetro counties	142,935	156,716	23,869	23,198	1.128	1.316	1,359
To/from other nonmetro	35,624	37,413	6,260	6,432	1.023	1.045	1.021
To/from metro	107,311	119,303	17,609	16,766	1.163	1.460	1.444
Total nonmetro counties, excluding Clarion and Indiana[1]	128,983	143,339	18,232	21,571	940	1.259	1.289
To/from other nonmet	29,961	33,948	4,614	5,988	875	1.017	.993
To/from metro	99,022	109,391	13,618	15,583	965	1.392	1.365

*PER = Poverty Interchange Index. LEP = Least Educated Poor Index. BDI = Brain Drain Index. Refer to "Data and Methods" for details on calculation and interpretation.

[1]These counties were excluded due to the high concentration of college students in their migration streams.

Source: County to County Migration File (STP28) from the 1990 U.S. Census of Population and Housing.

Table 3

Reasons for three most recent moves by poverty status, nonmetro Pennsylvania, 1991

Employment was far less important a motivation for the poor than reasons relating to housing, family, and context

Reasons	Reason was somewhat or very important								
	Third most recent move			Most recent move			Second most recent move		
	Total	Nonpoor	Poor	Total	Nonpoor	Poor	Total	Nonpoor	Poor
	Percent								
Housing-related:									
To live in your own home	54.0	58.7	46.2*	31.3	32.8	29.1	26.5	26.9	26.0
To save or live more cheaply	34.1	27.5	44.7*	23.9	20.7	28.3	21.0	20.0	22.3
Couldn't afford to stay	14.3	9.9	21.3*	13.7`	10.9	17.4	12.5	9.1	17.3
Trouble with landlord	8.1	5.5	12.4*	11.7	7.9	16.8*	8.0	6.2	10.5
Employment-related:									
To get a better job	11.3	13.2	8.3	18.1	22.5	12.0*	22.5	25.5	18.3
Loss of job	4.3	4.0	4.7	8.0	6.41	0.0	6.8	6.2	7.7
Family-related:									
Family reasons (for example, marriage or separation)	28.6	27.9	29.9	33.0	32.0	34.0	34.0	32.8	35.6
To live closer to relatives or friends	21.3	19.9	24.7	22.3	21.9	22.9	21.7	18.6	26.0
Context-related:									
To live in a more rural area	30.8	35.3	23.6*	19.2	21.5	16.2	17.3	16.6	18.2
To live in a nicer neighborhood	30.5	30.4	30.7	19.1	19.9	18.1	22.4	25.3	18.3
To live in a more urban area	5.9	4.5	8.3*	6.3	6.5	6.1	6.5	4.1	9.7*
Number of respondents	461	289	172	362	211	151	253	147	106

*Differences between poor and nonpoor significant at $p < 0.05$ using a chi-square test for independence between poverty status and three-category Likert items measuring importance of reasons stated.

Source: 1991 Pennsylvania Rural Livelihood Strategies Survey.

percent), "to live in a more rural area" (31 percent), "to live in a nice neighborhood" (31 percent), and "family reasons," including marriage or marital disruption (29 percent). Alternatively, only 11 percent of respondents listed "to get a better job" as an important reason for moving.

The biggest difference in reasons for moving between the poor and the nonpoor is that "to save or live more cheaply" was more likely to be an important reason for the poor in their most recent move (45 percent) than for the nonpoor (28 percent). The poor were also more likely than the nonpoor to give as reasons for moving, "couldn't afford to stay," "trouble with landlord," and "to live in a more urban area." These findings suggest that the poor move for cheaper housing and personal reasons rather than employment-related reasons.

Could the different reasons for moving between the poor and nonpoor reflect the shorter distances the poor tend to move? The poor were more likely to have moved within the same county than the nonpoor, and reasons for moving differed by distance of the move (table 4). Intercounty moves were more likely to be motivated by the following: "to save or live more cheaply," "to live in a nicer neighborhood," "couldn't afford to stay," "to live in a more rural area," and "to live closer to relatives and friends." Within counties, "to live in your own home" was the main reason for moves. Additionally, the poor were more likely to move within the county for the reasons "trouble with landlord," "couldn't afford to stay," and "to live in a more urban area."

The sample size for intercounty moves is too small to permit a direct comparison between the poor and nonpoor. Nevertheless, when the reasons for intercounty moves are ranked, some conclusions can be drawn. Both groups ranked moving to a rural area or a nicer neighborhood highly, and both also felt that "to save or live more cheaply" was an important factor. But the nonpoor chose "to get a better job" more often than did the poor.

The poor move more frequently than the nonpoor. Only 15 percent of the nonpoor had moved more than once during the past 5 years compared with 44 percent of the poor. While only 6 percent of the nonpoor had moved three or more times, 29 percent of the poor had done so.

Table 4

Reasons for most recent move by distance of move and poverty status, nonmetro Pennsylvania, 1991

Cheaper living and family-related reasons were especially important in longer moves by the poor

Reasons	Reason was somewhat or very important					
	Intracounty moves			Intercounty moves		
	Total	Nonpoor	Poor	Total	Nonpoor	Poor
	Percent					
Housing-related:						
To live in your own home	60.1	68.5	48.1*	39.4**	39.1	40.0
To save or live more cheaply	28.4	18.9	41.6*	47.4**	44.1	55.0
Couldn't afford to stay	10.7	4.4	19.2*	22.8**	20.6	27.5
Trouble with landlord	10.0	6.6	14.5*	3.8	2.6	4.5
Employment-related:						
To get a better job	5.1	5.0	5.4	25.7**	28.8	17.5
Loss of job	1.6	1.7	1.3	10.6**	8.7	15.0
Family-related:						
Family reasons (for example, marriage or separation)	27.5	28.0	26.7	31.4	27.6	40.0
To live closer to relatives or friends	15.2	13.4	17.7	37.1**	32.6	47.0
Context-related:						
To live in a more rural area	22.0	25.6	16.9	51.5**	54.3	45.0
To live in a nicer neighborhood	27.7	25.4	30.8	37.4**	40.2	30.8
To live in a more urban area	6.5	4.5	9.2*	4.5	4.4	5.0
Number of respondents	311	181	130	132	92	40

*Differences between poor and nonpoor intracounty movers significant at $p < 0.05$.

**Differences between total intracounty and intercounty movers significant at $p < 0.05$.

Source: 1991 Pennsylvania Rural Livelihood Strategies Survey.

Poverty status and age are the strongest predictors of the number of moves in the past 5 years, with fewer moves among older respondents. The number of relatives present in an area is also a significant factor, with fewer moves made by those with more relatives living nearby. For the nonpoor, age, number of children, number of close relatives, unemployment, and not being in the labor force are significant predictors of moving. On the other hand, age is the only one of these factors significant in moves for the poor. This is consistent with the portrait of the poor moving frequently in response to economic push factors.

Migration of the Poor Can Affect Rural Communities

The poor circulate between poorer counties in Pennsylvania and move more often than the nonpoor. Pennsylvania counties are attracting a disproportionate number of poor as a percentage of their migration stream. Moreover, poor migrants are not distributed equally among nonmetro Pennsylvania counties. Communities can be affected greatly by the influx of poor inmigrants. The inmigration of even small numbers of poor can swell local welfare and food stamp rolls, as well as increase the need for special educational programs for newly arrived children. The inmigration of poor persons only adds to the strain on human and social services.

There are a number of fiscal and social costs of moving. The poor—who can least afford to—are the ones who move most frequently. Frequent moving may be disruptive for families and children. The prospect that the urban poor are seeking refuge in depressed rural communities does not brighten the future of places that may already be struggling with fiscal strain and dwindling resources. Moreover, relatively few migrants are needed to significantly alter the demographic and socioeconomic composition of small communities. An influx of urban poor could thus easily affect the social fabric of small receiving communities. But if the well-being of the urban poor improves substantially from moving to rural areas, then steps to facilitate this movement and to assist receiving areas in adjusting should perhaps be encouraged.

Conclusions

Employment-related factors were not found to be very important reasons for moving among the rural poor. Employment was more important for intercounty than intracounty moves, but even so, "to get a better job" was a relatively unimportant reason for moving. Housing-related reasons, especially those reflecting economic push factors, were most prominent for the rural poor. The poor seem to be attracted to opportunities present in areas of

high poverty, such as cheaper housing. Many simply circulated within areas of lower economic opportunity.

In addition to gaining the least educated poor from metro counties, nonmetro areas lost many of their college-educated residents to metro areas. This loss of human capital is a disadvantage to nonmetro counties, in that there are fewer skilled workers to attract more profitable industries, which reduces the potential for local development. In Pennsylvania, the better educated were leaving simultaneously with the importation of the least educated poor, exacerbating differences between metro and nonmetro counties between 1985 and 1990.

Our analysis raises questions that deserve a closer look. How these findings for Pennsylvania may apply to other areas, as well as the issue of what community-level characteristics attract the poor, should be further researched at the national level. Meanwhile, the poor will continue to move, without gaining many of the economic advantages often associated with migration.

For further reading...

Janet M. Fitchen, "Residential Mobility Among the Rural Poor," *Rural Sociology*, Vol. 59, 1994, pp. 416- 36.

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Daniel T. Lichter, Diane K. McLaughlin, and Gretchen T. Cornwell, "Migration and the Loss of Human Resources in Rural America," in Lionel Beaulieu and David Mulkey, eds., *Investing in People: The Human Capital Needs of Rural America*, Boulder, CO: Westview, 1995, pp. 235-258.

Daniel T. Lichter, "Migration, Population Redistribution, and the New Spatial Inequality," in David L. Brown, Donald Field, and James J. Zuiches, eds., *The Demography of Rural Life*, University Park, PA: Northeast Regional Center for Rural Development, 1993, pp. 19-46.

Mark Nord, A.E. Luloff, and Leif Jensen, "Migration and the Spatial Concentration of Poverty," *Rural Sociology*, Vol. 60, 1995, pp. 399-415.

R D P Book Reviews

Compiled by Dennis Roth and Karen Hamrick

Pathways from Poverty Educational Network

Eileen Zuber and Steve Nelson, eds. University Park, PA: Northeast Regional Center for Rural Development, 1996, 140 pages. Available electronically from www.cas.nercrd.psu.edu (under "publications"); for more information, call 1-814-863-4656.

Pathways from Poverty Educational Network is a resource guide to organizations that are helping communities build coalitions and community capacity. Over 75 organizations in 12 Northeast States are listed. Included in each listing are the missions of the organization, their accomplishments, their funding, and a contact person.

The guide also includes the presentations from the 1995 Pathways from Poverty Workshop for the Northeast Region, which are provided as background material on the current state of rural poverty issues. Topics included are mothers in poverty (Virginia E. Schein), social capital as a pathway from poverty (John Gaventa), the demographics of rural poverty (Leif Jensen), causes of poverty (Ann Tickameyer), children in poverty (Patricia Garrett), and education and poverty (Daniel Lichter).

Broken Heartland: The Rise of America's Rural Ghetto

Osha Gray Davidson. Iowa City: University of Iowa Press, Iowa, 1996, 220 pages. ISBN 0- 87745-554-6 (paperback) $13.95. To order, call 1-800-862-6657.

Broken Heartland chronicles the changes that have happened in the rural Midwest over the last 20 years, focusing on Iowa. Much of the book discusses the farm crisis of the 1980's. Davidson looks at the roots of the farm crisis, starting with the Homestead Act of 1862. The results of the farm crisis are presented—outmigration of younger people, the aging of the population, closed businesses, unemployment, homelessness, and the rise in murder, suicide, domestic violence, and hate groups. Davidson characterizes rural Iowa as a rural ghetto due to the increase in poverty from the farm crisis. Rural development efforts, such as attracting meat packing plants, and their impacts on Iowa towns are discussed. A more recent development, large hog farms, is also covered. This is an expanded edition of *Broken Heartland*, originally published in 1990 by the Free Press. It contains extensive endnotes and references sections.

The International State: Crafting a Statewide Trade Development System

Carol Conway and William Nothdurft. Washington, DC: The Aspen Institute, 1996, 160 pages. ISBN 0-89843-186-7 (paperback) $15.00. To order, call 1-410-820-5326.

The message of *The International State* is that "state trade offices have the potential to be the nexus of a comprehensive statewide *trade development system*." (p. 11) This system includes State economic development and agricultural trade offices, other agencies that affect business competitiveness, for-profit and nonprofit trade facilitators, and representatives of foreign counties. Conway and Nothdurft outline the principles that should guide State efforts to design a trade development system in order to help businesses, communities, and regions compete internationally. The authors present a number of examples from U.S. States and foreign countries. Also included is a section on the history and current status of trade promotion in the United States.

The International State is part of the Aspen Institute's Best Practice Series. The Aspen Institute also publishes a companion volume, *Internationalizing Rural Economies: Problems, Principles and Practice*, by William Nothdurft.

Agrarian Women: Wives and Mothers in Rural Nebraska, 1880-1940

Deborah Fink. Chapel Hill, NC: The University of North Carolina Press, 1992. ISBN 0-8078-2019-9 (cloth) $37.50. ISBN 0-8078-4364-4 (paperback) $13.95. To order, call 1-919-966-3561.

Agrarian Women explores the daily life of farm women in Nebraska. Fink, an anthropologist, used interviews as well as other source materials, to understand the conditions of farm life during 1880-1940. Her focus is Boone County, Nebraska. Covered are the earlier, settler years, and the

changes that were brought about by the economic depression that began in rural areas in the 1920's. Among the many aspects of women's lives discussed are housing conditions, class differences, socializing in the community, marriage, motherhood, domestic violence, and alcoholism. She describes how the isolation of the farms, especially in the earlier years, had a great impact on the farm wives' lives. Throughout the book, Fink discusses agrarian ideology and what it meant for women's roles in society. Included are census and other demographic data for Boone County, photographs, and an extensive bibliography.